PILGRIM HOT SPRINGS
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A Master Plan:

Bringing together geothermal energy, history and Iñupiaq culture to create a sustainable and economically viable eco-tourism destination to the Seward Peninsula, Alaska.

By:

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Before beginning to read the following story of how the Master Plan for Pilgrim Hot Springs came to be, it is important to first acknowledge the many people that helped along the way. This was a wonderful project to commit myself to in my final year of graduate studies and the project would not have been successful had it not been for the following individuals and organizations:

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Pilgrim Hot Springs is a historic landscape in northwestern Alaska on the Seward Peninsula. It is located 60 miles north of Nome, the end location of the famous Iditarod dogsled race. Once a Catholic orphanage, today it is a hot springs soaking destination for those who know of its existence and who are able to access it. Recently, under the ownership of Unaataq, LLC, a consortium of seven Native corporations and regional non-profits, plans to renovate the site are just beginning. This master’s report assists Unaataq, LLC, in the design of a Master Plan to reinvigorate Pilgrim Hot Springs using ecological, historical, and cultural sensitivity to drive the design. This Master Plan uses the concept of integrating recreation, conservation, and education to create a viable economic ecotourism base camp from which other tourism opportunities based on the Seward Peninsula can be accessed. Pilgrim Hot Springs will provide creative options for year round human comforts and recreation, will sustainably harvest geothermal energy to operate off the grid, and create agricultural opportunities for the resort and the local native communities for year round consumption and economic gain. Methods for investigation include: case reviews of existing similar projects, site visit and landscape analysis, and informal interviews.
**INTRODUCTION**

**SITE CONTEXT**

The Seward Peninsula is located on the western coast of Alaska. It projects into the Bering Sea and is located just south of the Arctic Circle. Once part of the Bering land bridge that connected Siberia with mainland Alaska during the Pleistocene Ice Age, it is one of the most well-known migration routes of humans, plants and animals coming from Asia to North America. Archeological evidence proves the existence of Iñupiaq Eskimos on the peninsula for thousands of years. The National Park Service maintains the Bering Land Bridge National Preserve which makes up about ¼ of the Seward Peninsula. It is the most remote national park of the United States and has no roads leading to it. Access is by boat, bush plane, or during the winter months by dogsled or snowmobile. One of the most visited sites within the preserve is Serpentine Hot Springs. The site is loved by many including gold miners and entire Iñupiaq villages. Once considered a training ground for shamans, the site is still used for healing purposes by the Iñupiaq and recreationally by most other visitors. Today there is pressure to develop the site for tourism purposes but the archeological and geological treasures on the site make development extremely controversial. Additionally the precious geothermal microclimate that exists would be similarly compromised should development increase. However, the Seward Peninsula could stand to benefit economically from additional tourism opportunities. Just south of Serpentine Hot Springs is Pilgrim Hot Springs. Like Serpentine it is a historic landscape, once a Catholic orphanage and today a hot spring soaking destination for those who know of its existence and who are able to access it. Recently, under the ownership of Unaataq LLC, a consortium of seven native corporations and regional non-profits, plans to renovate the site are just beginning. If an opportunity for development were to take place at Pilgrim rather than within a National Preserve, tourism could be placed in the hands of the native population and could help improve the quality of life and aim to help preserve the culture and heritage of the Iñupiaq of the Seward Peninsula through economic development associated with ecotourism, geothermal energy production, and geothermal greenhouse food production while also protecting the precious land through environmentally and culturally sensitive design.
RESEARCH QUESTION

How can the development of Pilgrim Hot Springs encourage ecotourism in the Seward Peninsula that respects Iñupiaq culture and Pilgrim’s rich history, protects existing biotic communities, and utilizes geothermal energy?
The goals and objectives of the master plan are to:

1) Assist Unaataq in realizing the site’s unique potential to be an ecotourism opportunity in the arctic. 
Objective: design will incorporate knowledge of the site’s history, culture, arctic biotic communities, geothermal potential, and agriculture.

2) Aim for year-round use. 
Objective: design will consider all user groups, foreign and local, and consider hosting a diverse array of seasonal uses.

3) Create a sustainable campus that does not result in degradation of the environment. 
Objective: the site and suggested development will utilize sustainable practices, facilitate off the grid, improve habitat, and provide jobs for local residences.

4) Provide opportunities for cultural connection for the Iñupiaq. 
Objective: design will provide space for cultural camps, artist residency opportunities, and large-scale cultural fairs.

5) Rehabilitate the site which has been benignly neglected. 
Objective: address issues of illegal squatting, undesirable use and utilize historic structures and other existing structures to benefit the site rather than be cause for concern and legal issues.
This Master’s Report proposes to assist Unaataq, LLC, in the design of a Master Plan that aims to reinvigorate Pilgrim Hot Springs, using its history and native cultural ties to inform the design. It will also incorporate sustainable ways to use the geothermal energy found on-site with the assistance of research recently conducted at Pilgrim Hot Springs by Alaska Center for Energy and Power (ACEP). More specifically, a master plan for Pilgrim Hot Springs will highlight opportunities in the area that can potentially bring more economic support to an area that is rich with beauty and culture. Additionally, perspectives and an example interpretation sign will be created in order to help provide visual marketing tools for Unaataq LLC fundraising events.
Creating a master plan for Pilgrim Hot Springs involved a large amount of research simply because it is enveloped by so many different layers of information. Like any cultural landscape, Pilgrim Hot Springs has many layers of historic epochs, from prehistoric times to the era of the Gold Rush. There were numerous owners and users of the site and they occupied the land in many different, and yet also similar, ways. In reviewing this work, various patterns were revealed that were helpful in the design process. Also, this report refers to the potential of the site as having many influential variables such as the geothermal capacity, the possibility of how Pilgrim could help preserve parts of Iñupiaq culture in the area, and how these could be highlighted to boost the economy in the region through ecotourism. The literature review was daunting at first until the layers were peeled back and finally topics began to reveal themselves, helping make the research more organized. Like pages in a storybook, Pilgrim’s tale can be read from the layers of the earth that compose the modern landscape of the site: the geomorphology, the structure of current biotic communities, the remains of prehistoric and historic cultures, and the memories and lives of the Iñupiaq people. The main topics include: Cultural Landscapes, Iñupiaq Culture, Arctic Ecology, Geothermal Energy, and Tourisms. This framework guided the Pilgrim Hot Spring Master Plan design process.
Groups of people all over the world have their own definitions on what a cultural landscape is. This master’s report uses the National Park Service’s definition of a cultural landscape:

*A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values.*

Within this definition, there are then four general types of cultural landscapes: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes. Historic sites are significant because of their association with a historic event. Historic designed landscapes are associated with a prominent landscape architect or style of garden design. A historic vernacular landscape highlights the evolution of a landscape by people using, living, and working the land. Rural villages, industrial complexes, and agricultural landscapes are examples of these. Finally, an ethnographic landscape involves the association of natural landscape elements that have become cultural resources used to define a people’s heritage. Components of this type of landscape are important to know; they include plant communities, animals, subsistence and ceremonial grounds. Landscapes are therefore more than an assemblage of geographical features. They are multi-faceted, multi-layered, and simply put: complex. Why are they complex? Mainly because of human interactions; our social values, our cultural constructs, our political wiles—entire groups of people are who they are because of the landscape. Pilgrim Hot Springs is one such landscape that has shared an intimate relationship with humans for quite some time. It is no wonder then, that in 1977, Pilgrim Hot Springs was nominated and accepted into the National Register of Historic Places. It was finally recognized for its many contributions to Arctic life in rather unexpected and often contradictory ways—from prehistoric native ties to homesteading and agriculture, gold rush days that brought roadhouses, saloons and spas, to then undergoing a complete transformation into a Catholic orphanage and school. Fortuitously, each layer of human use is evidenced in remains found throughout the 320 acres of land. Today, ownership has come full circle and it is now owned by a consortium of seven native corporations known as Unaataq, LLC. Unaataq is appropriately named—it is the Iñupiaq word for hot spring. It is because of this geological feature that humans have been connected to this particular landscape and why they still continue to be. The history of Pilgrim Hot Springs is included in this literature review because it greatly informed the design of the master plan.
Since time immemorial...

According to Pilgrim Hot Springs’ Alaska Historical Survey Record card, Pilgrim Hot Springs’ periods of significance include the turn of the century, 1918, and 1941. It is stated as significant for it’s:

Natural phenomenon [hot spring], significant of period after flu epidemic of 1918, period of mission education in Alaska, Gold Rush period, and WWII.

Its description and significant features include: 320 acres, a compound of old mission buildings and gardens located on the only patented homestead in the interior of the Seward Peninsula, with a constant flow mineral spring.

Prior to the 1900’s, little is actually known of Pilgrim’s ties to the Iñupiaq in the area; everything is speculative. Other known hot springs on the Seward Peninsula have significant ties to particular villages. The people of Shishmaref feel proprietorship for Serpentine Hot Springs and have many stories that refer to the site as a shamanistic training ground. Hot seeps at Fish River and Elim are associated with entire villages as well, and like at Serpentine Hot Springs, there are established customs of use for both therapeutic and recreational purposes, as well as seasonal use patterns and habits that indicate ancient ties between the hot waters of the peninsula and the Eskimo people (Bland 1972). It is therefore common in the area to believe and reasonable to extend the same sort of connection of Pilgrim with the Kauweamiut, the people associated with the region of the Imuruk Basin where Pilgrim resides. They too have stories and they mention “places where the water comes out hot” and places to “use the hot water because it made us feel healthy” (Bland 1972). These stories however are few and far between when compared with Shishmaref tales of connection with Serpentine, but unlike the Kauweamiut, Shishmaref was spared the tragic decimation of their people when the 1918 flu epidemic swept through the region. Perhaps this is why so few stories survived. Before the 1918 epidemic however, another fever prevailed at Pilgrim: gold fever.

At the turn of the century, Pilgrim was known as Kruzgamepa and homesteaders leased their 160 acres of good farm land and modest farmhouse to a series of people who provided for the men of the gold rush. The original farmhouse was converted into a roadhouse, a saloon and bathhouse were constructed, and the last frontier saw its first spa. Popular literature of that time recounts stories of miners, gamblers, and their fancy women who arrived by dog team from Nome or from the railroad terminus at Bunker Hill which once existed only 15 miles away. Oddly enough, despite the glitz and glamour associated with a saloon and roadhouse, Pilgrim was still considered a farm as well and actually experienced a sizable growth in that department. Discovery of gold greatly increased the population of the area, fresh produce was in high demand, and due to the thermal amenities existing at Pilgrim, it was a highly productive oasis in the surrounding tundra desert. Despite the roadhouse burning down in 1908, which coincided with the decline of the gold rush, the homesteader fields and gardens continued providing and reverted into the quietude of the pastoral. Ten years later the devastation caused by the 1918 influenza epidemic, which had been particularly virulent among the Eskimo, ushered in a new era for Pilgrim. The sizable Catholic Mission and associated Our Lady of the Lourdes Orphanage was constructed (Bland 1972, NRHP 1977).
The flu resulted in many homeless native children, and with no orphanages available, the Kruzgamepa homestead, remaining townsite and adjoining lands, were purchased by the Catholic Diocese of Nome in order to build an orphanage, bringing the full acreage to what it is today at 320 acres. Almost all of the original farm buildings were utilized, including turning the roadhouse into a laundry. Both on-site virgin lumber and donated lumber from a local mining company were used to build the remaining mission structures: the dormitory-school house; quarters for the Sisters of Ursaline, which included an infirmary and additional classrooms (one of the most intact buildings at the site today); a church, which also housed the priests and brothers, a central kitchen, and root/wine cellar (also still standing, yet less intact than the nun’s quarters); a complete machine shop and outbuildings; a bathhouse and bathing ponds; barn and stables; and greenhouses. Some of the buildings were heated with the natural hot springs and even boasted flush toilets. The greenhouses took full advantage of the vital geothermal source and were able to produce vegetables all year long. Certain vegetables in the springtime were moved to one of seven outdoor garden beds or “truck gardens” and were said to have produced in abundance “7 pound turnips and 30 pound cabbages” (Bland 1972), potatoes, peas, and all types of greens and root vegetables—more than the mission needed. The grounds were carefully landscaped and boasted a central rock garden where a religious shrine was erected. Wild strawberries and native rhubarb graced the front of the church. Water was piped from the river by a windmill to a water tower near the nun’s quarters. Additionally the farm raised chickens, cows and horses during the summer months for eggs, dairy, and plow hauling. Wild game, mostly caribou at that time, and plentiful salmon runs, as well as other types of fish, provided meat to be smoked and dried for wintertime and to be sold. It was a self-contained campus and for 20 years, Pilgrim Hot Springs provided a home, including education for religious studies as well as homemaking and vocational skills, for 100 orphans annually. The staff of priests, nuns, brothers and several native adults averaged around 20. At one point, Pilgrim even had a post office and mining center for small placer claims still existing in the area, but in 1941, due to a decline in orphan numbers and the non-essential nature of gold mining in the face of war (WWII), it was closed and boarded up. Members of the Kakaruk family stayed on as caretakers to tend the fields which continued to supply produce to Nome and other communities. As many as seven trips made by bush planes to ferry produce occurred during harvest time (Bland 1972, NRHP 1977).
From 1942-43, after the defeat of the Japanese in the Aleutians, Pilgrim saw renewed activity when the church allowed the mission to be used for rest and relaxation of military troops in the area. Unfortunately “the final cadres not only departed in haste but with uncharacteristic abandon; with considerable breakage and looting” (item 8 pg 1 NRHP 1977). Since that time, Pilgrim has been leased by the church to various persons almost entirely for agricultural purposes. The buildings have steadily deteriorated and while still picturesque for the wondering tourist who happens by, funds to reconstruct or stabilize the buildings would require a hefty sum. There are many treasures to be discovered however, like the old machine shop and its array of old-fashioned tools and farming equipment, all still in considerably fair condition. Also on the premises are two burial grounds, one of which is still in use and is known simply as the “cemetery.” The other is said to be a mass grave of the influenza victims and has yet to be located (Bland 1972, NRHP 1977).

In 1969, a local venture called Pilgrim Springs, Ltd. made an attempt to develop the site as a historically oriented resort but it never made it past initial investigations (Bland 1972). Ten years later, the University of Alaska showed renewed interest in Pilgrim, but only for its geothermal potential. In order to get the drilling equipment in, an eight mile road was constructed from the Kugarak highway and the Alaska State Department of Transportation (ADOT) obtained a road easement from Mary’s Igloo, the village name of the Kauweamiut native people who own the land surrounding Pilgrim. ADOT has since abandoned that easement and current visitors to Pilgrim Hot Springs must technically trespass. The final page of the Pilgrim Hot Springs’ section of the Historical and Archeological Site Survey of the Seward Peninsula report by Laurel Bland, may foreshadow Pilgrim’s future as it forms the outline of this master’s report. Great potential still exists for Pilgrim Hot Springs:
“Pilgrim Hot Springs is unique to this entire report. Because of its strategic location, its status as private property, and the natural beauty and wonder of it, seen as a lush green oasis surrounded by arctic tundra, it may hold a key to meeting needs of the local Eskimo community as well as rational economic development related to tourism of the interior of the Peninsula.”
Historic preservation

Since the existing buildings on the land at Pilgrim are in various states of stability, it is important to research the various intervention approaches available to the preservation of historic structures. Below are the four types of techniques that would be appropriate to apply to Pilgrim’s existing built environment taking into account that different techniques could be more appropriate for one building over another. The type of historic preservation to undertake is completely dependent on the building type, its current state of disrepair, and its future use on the site.

**Preservation:** the maintenance of a property without significant alteration to its current condition. The historic building will maintain its historic integrity and as much of the original fabric and features as possible.

**Restoration:** the process of returning a building to its condition at a specific time period or often its original condition. This is an appropriate technique when portions of a structure’s historic integrity are lost.

**Reconstruction:** when a historic structure needs to be rebuilt entirely and physically in place for contextual reasons, even though it no longer exists. This often involves research and postulation from photographs.

**Rehabilitation (Adaptive use):** to be used for historic buildings needing repair, alterations, or an addition. This strategy preserves those portions or features that convey the structure’s historical, cultural, or architectural values while making compatible use of the property possible. Only this option approves of assigning a new use to the historic structure or property.

(Tyler 2009)
Painting entitled *The Wolf Dance* c. 1955-1965, ink, colored pencil, watercolor on paper 30cm x 45 cm. Artist: James Kivitoruk Moses
Understanding of humans’ connection to the landscape: The Iñupiaq worldview

It is important to understand the Iñupiaq worldview, particularly because this site is now once again, “owned” by the native community. The concept of land ownership is generally a western worldview construction. The essence of the Iñupiaq worldview does not see the landscape as something to be owned; it is one of stewardship toward the land. Lands are not meant to be privately possessed but instead should be held in honor of past ancestors and for future generations—“The Iñupiaq and their lands are inseparable, their relationship is one of kinship—Earth is a relative” (Krupnik 2004). The Iñupiaq worldview sounds very similar to the concept of sustainability: meeting our present day needs without depleting the resources to meet the needs of future generations. But the Iñupiaq understanding of sustainability goes beyond meeting “our basic needs” and it is one of religious proportions. Being human is being part of the earth. The earth helps people to understand who they are and how to live.

Land, for the Iñupiaq is an entity much like a person....the Earth itself can speak. One of the ways it has spoken and continues to narrate Iñupiaq landscape and worldview is through the act of place naming.... Iñupiaq toponyms (or place name) and associated folktales underscore human ties with the earth, local landscape, and destiny, providing predictive models of what it means to be Iñupiaq (Krupnik 2004).
Storytelling, subsistence, and sustainability

Place naming and storytelling are transmitted orally in the community and are held in high regard because they protect the code of what it means to be Iñupiaq. By giving names to places in the landscape, these toponyms become cultural artifacts and help to carry on the cultural ideology and share how to live in the harsh Arctic environment. Grandparents use their grandchildren as vessels; they pour memories into them and take them to important places in the landscape where traditions and ceremonies were once held. Behind Pilgrim for example, are the Kigluaik Mountains, considered an ancient marker of the Kauweramiut, where the Eagle Wolf dance had been performed. Children of the Kauweramiut would be expected to bring others to the ancient sites and to teach the traditions of the Eagle Wolf dance to another. This included passing on special drum beats, songs, and dance that have developed with the landscape over the centuries (Ublasaun 1996, Oquilluk 1973).

At the core of the Iñupiaq worldview is the understanding that humans are part of the earth, not separate from it and it is constantly being molded by humans’ encounters with the earth; its weather, flora, fauna, and landscape formations (Ublasaun 1996). The identity of the Iñupiaq is their relationship with the earth. It is understood that people are interdependent on the land and sea and that they must use these great resources wisely and with moral understanding if life on earth is to continue.

There are legends known by many on the Seward Peninsula that tell how the Iñupiaq once lived care-free in a warm environment. Then, the climate changed drastically because of two disasters: the first, an earthquake that then caused a volcano to erupt, the second a solar and lunar eclipse that lasted three days. On that third day a leader was endowed by a shaman with ingenuity and he learned to survive and teach his people to adapt to the cold by observing the animals: Caribou and foxes had fur, so he made clothes of their skin; spiders caught their food in a web, so he wove a net to catch fish; snowshoe hair could walk on snow with their big feet, so he made snowshoes that displaced human weight over a large area; ants and mice made subterranean dwellings out of plants, so he built a subterranean home with wood, bone, and sod (Oquilluk 1973).
The concept of transformation in Inupiaq storytelling, where humans have ties with animals and can transform into them, illustrated how bonded together, in an endless cycle of subsistence and movement, humans are with animals (Ublasaun 1996, Krupnik 2004). A story about transformation then, conveys the subsistence life-style of the Inupiaq, sharing how to be self-sufficient in the Arctic and how to survive the winter. Subsistence is hunting, fishing, gathering, and about using all parts of an animal; for food, clothing, and tool making. When to engage in different subsistence activities is defined by the cycle of recurring seasons thus also formulating the Inupiaq concept of time from which all other cultural activities, village celebrations, religious ceremonies, and products of hunting and gathering were part of, stem from. Trade Fairs, where tribes from all over the Seward Peninsula and from across the Bering Sea would migrate to, were one such yearly event where pokes (animal stomach sacks) of oil, seal, whale, walrus and maktak (blubber), as well as Caribou and other animal skins were traded for Russian tobacco, jade, pottery, beads, and other furs. Often dances, athletic contests and feasts followed (Ellanna 2004). With daily and annual life revolving around the seasons, it is again, understood that the Inupiaq do not see themselves as separate from nature but a vital part of it. The use of the tundra and sea entails responsibilities. Paramount among those responsibilities is sharing subsistence resources with others (Chance 1990). Bonds with family and the community are very important then, because kinship means having a vast network of people to share food, stories, cash and shelter with. Survival is about knowing and sharing the land. Place thus becomes the core of what must be known in order to prosper among the Inupiaq (Ublasaun 1996). Place naming, storytelling, and a subsistence life-style, help to convey the Inupiaq core value of being part of the earth and, in essence, what it means to be sustainable.

Designs at Pilgrim Hot Springs will be inspired by and incorporate the Inupiaq belief system not only because it embodies sustainability but because its existence is threatened:

*The land has names, be it on the coast or inland, but we are beginning to forget these names. The days are here when we are starting to forget the names of the land, the period of forgetting the names has already begun...*

~ Davey Ningeulook. 1997 (Krupnik, 2004)
Native issues and the “period of forgetting”

The repetitive nature of the quote above is to emphasize the true severity of the situation. The Iñupiaq have existed on the Seaward peninsula for centuries. Evidence of humans crossing over the Bering Land Bridge and settling in the region dates back almost 13,000 years ago according to archaeological finds in the Bering Land Bridge National Preserve. Unfortunately, today, there is cultural disconnect and suicide rates are fastest growing among native peoples (Hopfinger 2012, Butler and Hinch 1996). The unraveling of the Iñupiaq culture can be traced back to the early 1900’s, where the Iñupiaq were poised at the edge of an intense cultural shift: before increased commercial whaling depleted precious sea mammal numbers, before the gold miners ravaged the tundra and brought manufactured European goods and illness, before the Caribou disappeared, and before forced Christianity replaced traditional Iñupiaq society. Oddly this parallels the known history of Pilgrim Hot Springs…

Because Pilgrim is surrounded by what is known as Mary’s Igloo land, or land owned by the people of Kewarak- the Kauweramiut, the following short history pertains only to these people. They are said to be the tribe most likely related to the prehistory of Pilgrim Hot Springs.

In the late 1800’s, Mary’s Igloo, a name most likely given by the miners who visited the town, once bustled with life and had a mosaic of building types from traditional sod-covered Iñupiaq homes, to clapboard, tents, two churches, an inn and a hotel. Missionaries had introduced reindeer herding to help native communities recover from caribou disappearance and the sea mammal depletion by the whaling industry, believing also that herding was more civilized than relying solely on hunting, fishing and gathering. In turn many Iñupiaq made a living off of selling reindeer meat to mining companies and roadhouses. It was highly frowned upon for the native herders to use their own reindeer meat for personal consumption because herding was introduced as a purely economic venture for the native communities to accumulate cash (Ellama 2004, Oquilluk 1973). Similar to a Trade Fair mentioned previously, in 1914, the first Reindeer Fair was held in the town, bringing together native herders from all over the peninsula. The fair left many filled with hope and relief that changing times would help keep the native community afloat but two years later, the flu arrived. In a matter of days, Mary’s Igloo was decimated. Survivors, numbed by grief and shock seeing so many loved ones so quickly diseased, relocated the village, a common reaction to when so many members of a village die. Mary’s Igloo split between two locations: 14 minutes downstream to New Igloo, and the orphans, 14 minutes upriver to Pilgrim Hot Springs (Oquilluk 1973). The orphanage only lasted about 20 years. As New Igloo did not have the resources for a high school, many children of this age were sent to big cities to attend school during the 1950’s; a relatively common practice. Communication was difficult between rural areas and big cities and therefore the connection to the Iñupiaq way of life slowly began to sever. When graduates returned, they were caught somewhere between Western and Iñupiaq worlds. Today, this balancing act continues to be difficult to manage (Chance 1990).
This literature review does not want to delve into the severe problems of suicide, family violence, sexual abuse, alcoholism, unresolved grief, mental illness and racism that have all too long afflicted many of the native communities (Hopfinger 2012), but acknowledges that they do exist. Based on their history, it is appropriate to provide a place for the Inupiaq to gather and remember their connection to the landscape, their ancestors, and their culture. Pilgrim Hot Springs could be such a place to host cultural camps where grandparents can once again pour memories into their grandchildren and perhaps the Trade and Reindeer Fairs could happen in turn as well.
Moving away from the “time of forgetting,” the second half of the Iñupiaq Culture section is devoted to remembering. How did a people live in the Arctic for 13,000 years? Living in the Arctic is no easy task. Those that do not adhere to weather warnings, respect wildlife, or understand the landscape enough to save themselves when they are lost, ultimately perish. Understanding how the Iñupiaq viewed the arctic landscape and their place in it and by looking at how the Iñupiaq survived all those years on the Seward Peninsula has great design implications for envisioning a place that is truly sustainable, not only because it can withstand the climate but also because it can educated others on how to continue to live sustainably in the arctic. There is storytelling and then there is story-living.

Eskimo architecture is about using what materials can be found. The Seward Peninsula is mostly rolling tundra and trees only exist along river channels, yet the ocean washes up vast amounts of drift wood. The bones of animals, whose bodies had been carefully consumed by entire villages allowing them to survive another winter, not only provided food but also materials for making protective clothing, and continued being used as door frames and wall supports. The arctic tundra, which protects the permafrost with its extensive array of moss and lichens, is an excellent insulator. Sod houses were built into the ground and covered by the tundra and a family’s living situation blended so well into the landscape that their “footprint”, to use the vocabulary of modern day sustainable practices, was hardly noticeable (Reinhardt 2010).

These semi-subterranean frame dwellings resembled “small hills with protruding smoke stacks. A small skylight made of the translucent stomach of walrus or glass was set in the apex of each sod-covered mound—the skylight being large enough to emit light and small enough, hopefully, to deter the raiding paws of a polar bear…” (Ellanna and Sherrod, 2004). Surrounding the sod dwellings there were...
numerous caches, both elevated with different levels for storing food at the top, skins on the next level, and canoes at the base, and subterranean cashes that would act like a refrigerator and keep food frozen. Also, people traveled during the different months of the year and they would construct different structures for the different places they went to hunt and fish (Ellanna and Sherrod 2004, Reinhardt 2010). Inupiaq dwellings are known about through interviewing Inupiaq elders and the archeological excavations that followed. During an excavation in Bering Land Bridge National Preserve, an elder, visiting his boyhood home, explained how buildings were erected by leveling support beams, floor planks and other horizontal members with the expansive horizon of the sea as a reference. Also, such architecture is depicted in Inupiaq art and craft (Ublasaun 1996).

Arts and crafts are important to the Inupiaq way of life because they enhanced a storyteller’s ability to relay the past. Today, crafts have morphed into more than storytelling props. In order to fit into the western model of living, they have become an important part of the economic way of life for the Inupiaq and subsequently they play a key role in helping to prolong the Inupiaq identity. Arts and crafts from the early 1900’s share images of past daily life, of religious healing ceremonies and traditional dances (Ublasaun 1996). There are ivory pieces that depict reindeer herding and subsistence hunting techniques. While some of these older pieces go to museums, including one such traveling museum coordinating by native corporation Kawerak, Inc. called Beringia Center of Culture and Science, that travels to the villages of the Seward Peninsula, more modern renditions are sold for a high cost at specialty shops all over Alaska. Pilgrim could help support Inupiaq arts and crafts by not only selling such pieces but by providing a place for such artwork to be made as well. Perhaps a place similar to a native arts and crafts cooperative like the one that operates in Kotzebue, called Sulianich Art Center, could exist at Pilgrim Hot Springs that could also offer artist in residency programs.

Ivory carving of transformation: a human drummer with a whale tail. By Levi Tetpon, an Inupiaq Eskimo. Price: $1,100. Due to marine mammal protection laws it cannot be exported outside of the United States.
It is said that the villagers in Whales, a historic Iñupiaq village that may stand to benefit from sustainable development at Pilgrim, can look out across the Bering Sea and see Big Diomede Island in Russian Territory. Twelve thousand years ago, during the Last Ice Age, water levels were so low that Russia and Alaska were actually connected by a land mass known as Beringia. Most archeologists agree that Beringia is where humans first passed from Asia to populate the Americas. It was also an important migration route for animals and plants as well (NPS BELA 2012).

The peninsula is full of biological and geological significance and shares its northern boundary with the Arctic Circle. Characterized by below 0°F temperatures, constant ice and snow cover, continuous darkness in wintertime, and by a short growing season that maximizes the continuous daylight during the summer, the arctic environment is often viewed as a monotonous landscape. The stark lack of trees and abundance of cryptogams (spore reproducers)compose the carpet of tundra (vegetation composed of tall and dwarf shrub heath and graminoid-moss) which is the dominate plant-type of the arctic landscape. (Global Climate Change, Barbour & Billings 2000). There are two types of characteristic soil layers in the arctic; the active layer, which thaws during the summer months, and permafrost, which remains permanently frozen. Tundra grows on the active layer and is essential to the arctic ecosystem because it protects the permafrost, helping to keep it perpetually frozen. Permafrost underlies all of the Seward Peninsula and has a dynamic process of an annual freeze and thaw action that makes the depth of freezing vary across the landscape. Surface features, expressed by the range of freezing that occurs, are described as sorted and non-sorted circles, stripes, polygons, earth hummocks and solifluction (water saturated active layers that can “flow”) steps. Larger surface features, caused by permafrost heaving found on the peninsula, are ice-covered hills called pingos,
and small ice mounds known as palsas. These features are what influence plant distribution and soil development and what makes the monotonous landscape look not so monotonous upon closer inspection. In general, the presence of permafrost also implies that decomposition, nutrient release, and material synthesis from weather, happens very slowly (Barbour & Billings 2000). It is because of this slow decomposition rate that the arctic ecosystem is considered very fragile and thought to be one of the most susceptible ecosystems to global climate change. Tundra and soils in cold eco-regions are currently net sinks for atmospheric CO$_2$ because it becomes frozen within the permafrost. However, if atmospheric temperatures continue to rise, the depth of the active layer will increase there by turning the arctic into a CO$_2$ source (Global Climate Change, Barbour & Billings 2000).

It is important to understand the ecology of the peninsula in order to learn from it and begin to educate those who do not know of its fragility. Though we cannot keep permafrost from thawing, we can try to teach visitors to understand the connection between human caused climate change and the effects it will have on both the arctic and, eventually, the entire world if we do not reduce our emissions. Any development at Pilgrim Hot Springs should take this into consideration and aim to be a net-zero carbon emitting design. Using geothermal energy found on site would help to achieve such a goal.

Wild Iris, *Iris setosa*, blooms in abundance at Pilgrim Hot Springs late July-early August. They are well suited to wet ditches and average soil. Though generally considered poisonous to ingest, the rootstalk boiled and ground can be applied as a polstice to relieve pain and swelling of topical injuries.
What is geothermal energy?

Geothermal energy is the ability to recover and utilize the earth’s heat to benefit humans. Geothermal energy can be located everywhere. It is just beneath the surface of the earth; however, the most desirable places to harness geothermal energy are those that produce the highest temperatures closest to the surface where they can be accessed and utilized. These resources tend to be concentrated in regions of active or geologically young volcanoes and such is the case with the Seward Peninsula where Pilgrim resides. The Seward Peninsula is home to the largest maar lakes in the world, and the Lost Jim Lava Flow formation that is only 1-2,000 years old. In addition to Pilgrim, there are several other geothermal hot springs located throughout the peninsula.

To understand how a geothermal system works, there are a few key terms and concepts to understand. To start, the geothermal gradient is the understanding that heat increases in temperature with an increase in depth into the earth’s crust. A geothermal system is an area of high heat that transfers heat to areas of cooler temperatures to create uniform conditions. Volcanoes, geysers and hot springs are examples of geothermal systems that are the visible or tangible evidence of high heat flowing from the earth’s interior to the cooler surface of the earth (Dickson and Fanelli 2004, Duffield and Sass 2004).

A geothermal system is made up of three components: a heat source, a reservoir, and a fluid. The heat source can be considered either a very high temperature (>600°C) magmatic intrusion that has reached shallow depths (5-10K) or a low-temperature system that follows the geothermal gradient concept above with temperature increasing with depth. The reservoir is a volume of hot permeable rocks from which the circulating fluids extract heat. More often than not, this reservoir is covered by impervious rock and is connected to a surficial recharge area through which the fluid can replace or partially replace the fluids that escape to the surface in the form of a natural hot spring or human-made borehole. The fluid is generally meteoric water (long standing water generated by precipitation) and depending on the temperature or pressure, is either in a liquid or vapor phase. This water often carries with it other chemicals and gas originating from the rock that the water was heated by and is what causes the sulfur smell associated with some hot springs for example. The mechanism underlying most geothermal systems is governed by heat driving the convection of fluid (fluid convection). Heated fluid of lower density tends to rise and replace colder fluid of higher density. This concept governs how the geothermal gradient works (Dickson and Fanelli 2004).
Of the three parts of a geothermal system, only the heat source needs to be natural. In some cases, if the natural heat source has too low a temperature to produce steam to turn a turbine, another liquid, with a lower boiling point, can be heated by the natural liquid, and used to transfer heat into other forms of energy. In order to replenish a reservoir after the heated water has been extracted; there are ways to artificially re-inject previously used water back into the geothermal heat source with injection wells (Dickson and Fanelli 2004). Re-injection is very important to a geothermal energy system because this is how the process sustains itself, preventing it from drying up.

**Direct use:**
bathing, agriculture, and heating buildings

Direct use is one of the oldest and most versatile uses of geothermal energy. Geothermal direct use involves the following: 1) swimming, bathing, and balneology (treatment of disease by bathing, a common practice among the Inupiaq), 2) space heating and cooling, 3) agricultural application through greenhouse and soil heating, and 4) Aquaculture (Lund 2009). Space heating and cooling requires absorption machines which utilizes the heat, instead of electricity, as the energy source. Greenhouse heating involves either forcing the circulation of air with heat exchangers, hot-water circulating pipes or floor ducts, finned units along the walls and under benches, or through a combination of these techniques. Greenhouse construction requires effective thermal insulation and, recently, a double layer of film separated by an air space has proven to be the most effective. Heated greenhouses can support the cultivation of vegetables and flowers out-of-season in colder climates like the Arctic. Aquaculture can support the year-round production of fish or ‘super-foods’ like the micro-algae spirulina, which has been proposed to solve famine in poorer countries due to its excellent nutritional attributes (Dickson and Fanelli 2004). At Pilgrim, all direct uses of geothermal energy described above are applicable.
Energy production

For centuries, geothermal energy has benefitted humans through the use of hot spring bathing. However, it is only in the 20th century, that technological advances have developed a way to tap into this energy source and use it in other ways, most importantly, to generate electricity. Today, in the midst of declining fossil fuel reserves, increased energy demand, and having to pay attention to publicly recognized environmental constraints, electricity produced by geothermal energy is an extremely likable option. The utilization and implementation of geothermal energy has many advantages over fossil fuels: it is much less intrusive than mining and does not involve the digging, crushing and processing of large amounts of rock; it is usable over a wide spectrum of temperature and volumes; and it is renewable (Duffield and Sass 2004). Electricity production is usually generated with conventional steam turbines, a binary plant operation, or combination of the two. Most likely, a simple steam turbine operation would work best at Pilgrim and so other system types will not be discussed here. In a conventional steam turbine system, temperatures are required to be at least 150°C and must be available with either atmospheric (back-pressure) or condensing exhausts. Atmospheric exhaust turbines are cheaper and simpler to use because they either get steam directly from a dry steam well, or after separation, from wet wells (the latter which would be the case at Pilgrim). It is also possible to produce electricity in small mobile plants in isolated areas where local resources are available (Dickson and Fanelli 2004).
Alaska Center for Energy and Power research

Finally, it is important to recognize the work that has gone into geothermal exploration at Pilgrim. Such research brought the construction of the road to Pilgrim in 1980 and today, more research explores the possibility of a large scale geothermal electricity plant that would not only support a small scale resort at Pilgrim Hot Springs but could perhaps provide energy for Nome as well. The objectives of geothermal exploration are (Dickson and Fanelli 2004):

1. To identify geothermal phenomena.
2. To ascertain that a useful geothermal production field exists.
3. To estimate the size of the resource.
4. To determine the type of geothermal field.
5. To locate productive zones.
6. To determine the heat content of the fluids that will be discharged by the wells in the geothermal field.
7. To compile a body of basic data against which the results of future monitoring can be viewed.
8. To determine the pre-exploitation values of environmentally sensitive parameters.
9. To acquire knowledge of any characteristics that might cause problems during field development.

Geothermal exploration currently being carried out at Pilgrim involves multiple drilling experiments to try and locate the reservoir. In order to reduce land disturbance, the sites where drilling experiments have already occurred, could be potential sites for future bathing facilities. They have conducted a thorough site analysis using satellite based geothermal anomaly mapping, concluded an airborne FLIR (forward looking infrared radiometry) survey and data analysis, carried out a shallow temperature survey, completed airborne geophysical and ground-based resistivity surveying, and have repaired existing wellheads (UAF 2012). Additionally, they have produced excellent trail maps, aerial photography, and exploration result graphs and have been more than willing to collaborate with this Master’s Report.

Geothermal energy is considered a “clean energy” if extracted correctly (Sorensen 2009). Small-scale geothermal resources are capable of solving numerous local problems and raising the living standards of small isolated communities, or perhaps could even support an ecotourism resort dedicated to environmental protection, Iñupiaq cultural integrity, and sustainable development.
Tourism is not a new concept for Pilgrim Hot Springs. In fact, the resort at Pilgrim Hot Springs was a favorite getaway for many of the miners and gamblers of the 1898 Nome Gold Rush, accessed by dogsled in winter and by floating boats in summer. Pilgrim Hot Springs was so successful with these users that at one point even a post office existed there (Bland 1972). In general then, as was the case with Pilgrim’s turn of the century history, tourism can be good for the economy. Other positive aspects of tourism, besides economic regeneration, includes establishing heritage and environmental preservation, creating needed infrastructure such as small healthcare units and educational facilities, fostering cultural communication, and building political stability (Farsanni, et al. 2012, Buckley ed. 2004). On the downside however, because tourism occurs at the same place where it is produced, host destinations and the local population often note environmental degradation and cultural pollution when tourism is not carried out successfully.

Sustainable tourism

To combat these commonly cited issues of tourism, sustainable tourism attempts to incorporate the goals of sustainable development; to design that which “meets the needs of the present without compromising the ability of future generations to meet their needs” (Farsani et al. 2012). Sustainable tourism works to meet three goals: economic stability, sociocultural stability, and environmental stability. It implies permanence and therefore seeks to optimize the use of resources, including providing for biological diversity, minimizing ecological, cultural and social impacts, and in turn, seeks to maximize the benefits for conservation of natural and cultural heritage and local communities. Sustainable tourism also implies creating ethical and authentic experiences for tourists striving to treat the environment, host communities and employees in an ethical manner while providing tourists with a genuine experience of cultural events, products, and services (Smith, Macleod, and Robertson 2010).

Under the umbrella of sustainable tourism, this literature review section will also look at ecotourism, indigenous tourism, agritourism, geotourism, and various other niche tourism types. Pilgrim Hot Springs has the potential to accommodate all or part of each of the tourism types to be defined in the following pages.
Ecotourism

Ecotourism strives to conserve the environment, enhance the lives of local communities, and educate the visitor about place. It generally focuses on five key principles: it is always nature based, it is ecologically sustainable, and environmentally educative, locally beneficial, and satisfies the tourist (Smith, Macleod, and Robertson 2010). According to Martha Honey, author of multiple ecotourism books, ecotourism also respects local culture and supports human rights and democratic movements. The ecotourism industry is generally made up of three broad sectors: tour operators, eco-lodges, and eco-tour attractions. Not only must tour operations and attractions be owned by the local community, but there must also be varying degrees of hospitality offered. Eco-lodges and other facilities must use local materials, establish green building codes, and use green energy solutions (Smith, Macleod, and Robertson 2010, Honey 2008, Fennell 2002). Within ecotourism, there are hard and soft path perspectives that exist on a scale between nature-related interests and physical rigor. As mentioned above, it is important to have varying degrees of hospitality offered because ecotourism recognizes that the eco-tourist can vary from either hard-core nature, dedicated to nature, mainstream nature, or be a casual nature tourist. As characterized by Fennell in the book Environmental Programme Planning, “hard-core” types are generally made up of scientists and researchers or members of tours designed for educators or people doing some sort of community service-related project. The dedicated nature tourists are those who take trips to see protected areas in order to understand the local natural and cultural history. Other nature tourists are those who travel to unique destinations, like the Amazon River, simply for the pleasure of having gone to an unusual place. And finally, the casual nature tourists are people who participate in nature incidentally by way of being part of a larger trip or tour group (Fennell 2002). Governing bodies of eco-tourism destinations educate their guides and make sure they can handle their groups before shepherding tourists to explore potentially sensitive areas. In some cases, decisions are made about whether or not to prohibit certain areas altogether if risk and damage to an area is deemed too great (Buckley ed. 2004).
Indigenous tourism

Similar to ecotourism, indigenous tourism follows the same development principles but focuses more on aspects of the indigenous culture. The term indigenous is used to describe races of people who are endemic or native to a destination region (Butler and Hinch 1996). There is a growing appreciation for cultures and traditions that have lasted through the ages. From that, the accompanying recognition is that these resilient and dynamic cultures are fragile like the environment that formed them, and must be protected (Smith, Macleod, and Robertson 2010). Tourism is often viewed as one of the first strategies for protection and revitalization of indigenous populations (Buckley ed. 2004, Butler and Hinch 1996, Farsanni, et al. 2012). Local empowerment and self-determination are integral concepts to implement in order to achieve long term benefits with indigenous tourism. This is necessary because the framework of this tourism “occurs within the context of a global tourism industry that is dominated by non-indigenous actors” as pointed out by Richard Butler and Tom Hinch in their book Tourism and Indigenous People. Also, what is too often a shared past by many indigenous cultures around the world, indigenous tourism must be managed sensitively because many of these populations have been treated poorly. Most colonizers, missionaries and successive governments, have come in and taken land and tried to dilute or eradicate traditional lifestyles by forcing western assimilation (Smith, Macleod, and Robertson 2010, Butler and Hinch 1996). Many languages and religious traditions have been nearly wiped out in this manner. If local populations are allowed to manage their own tourism efforts, perhaps the loss of culture can be reversed, so that it can be revived, and celebrated once again.

Knowing that the environment and the culture cannot be separated, conservation of the environment and cultural traditions go hand in hand. The aforementioned book, Tourism and Indigenous People, uses the Four “H” system: Habitat, Heritage, History, and Handicrafts to promote this human-land connection. These elements are interrelated and should be at the core of any indigenous tourism planning effort. During their stay, tourists should come to understand the geographic setting (habitat), the ethnographic traditions (heritage), the effects of acculturation (history), and be able to take home handcrafted souvenirs. Habitat is about capturing the sense of awe in a place and can be described by five elements of geography: surface features; climate; water; wild vegetation; and soils. Heritage involves that body of knowledge that ensured human survival within the habitat and the beliefs and values that may have developed around the five elements of habitat. History refers to post-contact relations between native people and Westerners and handicrafts are the trinkets of culture that represent trade, art, and stories of a culture that are easy to share and sell (Butler and Hinch 1996).
Agritourism

Agriculture, in the form of agritourism, can play a key role in linking historic land uses with the present at Pilgrim Hot Springs. Humans depended on agriculture in the past and with the world population growing, humans are dependent on it even more today. The problem, however, is that the general public is largely unaware of this issue. Agritourism seeks to address this situation as many people are beginning to actively seek educative vacations based on learning to farm (Sznajder, Przezborska, and Scrimgeor 2009). The basis of Agritourism is made up of three areas of focus: service, accommodation, and mobility (walking/biking tours, etc.) The tourist participates in agritourism in order to familiarize themselves with farming activities whether it is putting on boots and hauling hay (service) or simply coming to recreate in an agricultural setting (Sznajder, Przezborska, and Scrimgeor 2009). Similar to ecotourism needing to have varying levels of accommodations and hospitality, this is true for agritourism as well, which depends on having multi-functional development. When designing for agritourism destinations, it is important to take into account the use of space and the aesthetics of that space. In general land use should include cropping space, livestock, orchard and plantations, forest space and potentially fishing space if it does not interfere with local subsistence needs. There must be an organization of the agricultural production space, and well-maintained forests and trails. The food and beverage should be exquisite and accommodations should celebrate the surrounding rural environment (Sznajder, Przezborska, and Scrimgeor 2009).
Geotourism

For this work, it is also important to discuss the concept of geotourism, which is a fairly new type of tourism coined in 1998 by the World Tourism Organization (WTO). Defined by the WTO as:

*Tourism development that meets the needs of present tourists and host regions, while protecting and enhancing opportunities for the future leading to management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biologic diversity, and life support systems* (Farsani et al. 2012, 10-11).

Geotourism extends the principles of ecotourism beyond nature and ecology and focuses on sharing the characteristics that contribute to a sense of place; historic structures, traditional culture, landscapes, cuisine, artistry, as well as flora and fauna. In many ways geotourism incorporates all of the tourisms previously described and is considered a branch all of its own of sustainable tourism, focusing on those tourists interested in traveling to experience and learn about earth heritage; its geology, geomorphology, geodiversity, and geography (Farsani et al. 2012). Because geotourism leans towards a niche market catering to visitors seeking a very specific experience, it tends to incur less impact on the destination environment and focuses on promoting destination stewardship. A geotourism destination is often called a geopark. Establishing a geopark does not affect the legal status of a property. Federal, provincial, territorial and first nation laws remain in effect. However, such a status can encourage the local community to engage in cultural interchange and identity preservation, while also educating and motivating people to effectively participate in pursuing sustainable development and a sustainable tourism that expands the concept of sustainable living practices to its visitors through education and demonstration (Farsani et al. 2012). This would be a fitting tourism model to use at Pilgrim Hot Springs.
Other tourisms that could be associated with Pilgrim Hot Springs:

All of the following definitions are found in *Key Concepts in Tourism Studies* by Smith, Macleod, and Robertson (2010):

*Special Interest Tourism:* traveling with the primary purpose of practicing or enjoying a particular hobby or interest such as birding, or watching the famous Iditarod, both of which occur near Pilgrim.

*Adventure Tourism:* active, passive or nostalgic engagement with sports activities which could mean providing opportunities for backpacking, skiing, or snowshoeing at Pilgrim.

*Health and Wellness Tourism:* provides opportunities for activities and practices which contribute to personal health and wellness, including the physical, mental, psychological and emotional well-being of an individual. This is one of the oldest forms of tourism and has most likely been occurring at Pilgrim since before agriculture. Soaking has often been associated with improving health.

*Heritage Tourism:* virtually incorporated into the description of indigenous tourism already, but described here as tourism focused on historic attractions such as buildings and objects, as well as those intangible aspects of traditional lifestyle and culture of host destination communities. Pilgrim has no shortage of history and heritage.

*Business Tourism:* involves the travel and accommodation of people attending professional events such as annual meetings, seminars, conferences, exhibitions, trade shows and corporate retreats. This tourism type might do well at Pilgrim.

*Regeneration Tourism:* typical strategies of regeneration tourism involves developing ‘flagship’ projects, such as cultural attractions or events, which draw in tourism and act as catalyst for further investment in the development of rejuvenating the environment.

*Experience Tourism:* accommodates tourists who are highly motivated to consume meaningful experiences and are willing to pay for those “one-of-a-kind” experiences. At Pilgrim this would be associated with the Northern Lights, the Iditarod, and Inupiaq trade festivals.

*Dark Tourism:* visits to sites associated with death, disaster, warfare, genocide, and human suffering. This includes memorials and burial grounds. Pilgrim has history with the 1918 flu epidemic with a mass burial site’s whereabouts yet to be known.

*Volcano Tourism:* visitors interested in seeing volcanic processes at work or formerly active volcano sites and those natural phenomena associated with it such as hot springs and geysers.

Finally there is also *Arts Tourism* which involves travel to places hosting performing and visual arts festivals. Pilgrim could become such a place to celebrate Inupiaq art, performance, and storytelling.
Current tourism in the Seward Peninsula

Currently in the Arctic, there is a two-day Nome-Kotzebue tour package that attracts 11,000 visitors each summer. According to the book *Tourism and Indigenous People* mentioned above, it is one of the most successful indigenous tours in Arctic America. All of the four H’s are present; Inuit tour guides belonging to a Native Coop share stories about their habitat on tundra tours and heritage is shared through dancing and music at the Museum of the North where arctic food of salmon, caribou and maktak are also offered. In Nome, stories and photos focusing on the 1898 Gold Rush are shared through museum tours and outdoor sculptures scattered throughout the town. Even the flight from Nome to Kotzebue offers tourists the chance to “cross the Arctic Circle” without having to book an extra flight. Photographing the “midnight sun” is another popular activity as is seeing the aurora borealis or northern lights during a winter visit to see the famous Iditarod. Well-made handicrafts built from traditional materials of baleen, ivory, bone and wood, can be found at most stores and they often have a story about the artist attached to them (Butler and Hinch 1996). Developing a tourism destination at Pilgrim Hot Springs would likely collaborate well with and greatly enhance the existing tourism economy on the Seward Peninsula.
Pilgrim Hot Springs is a cultural landscape endowed with a rich cultural history. Each historic epoch offers design inspirations from rehabilitating the old church and nun’s quarters to reinstating agricultural fields and greenhouses. The geothermal energy found on site offers great potential for a remote development to sustain itself off the grid and will be able to do so through all seasons. The Arctic ecosystem, though fragile, has such magnificent beauty that when coupled with environmental education and low impact development, has potential to inspire visitors to become environmental stewards. Finally, the Iñupiaq of the Seward Peninsula have a very large part to play in the development of Pilgrim Hot Springs. Not only must the Iñupiaq worldview become evident in the design but the people themselves, with the guidance of Unaataq, LLC, must embrace this place and help make it their own so that they may reinvigorate and continue to be proud of their culture and traditions. The Iñupiaq are a people of the arctic landscape and their ingenuity to survive in such a harsh environment for the past thousands of years should be appreciated and celebrated by those who visit Pilgrim. Sustainable tourism encapsulates many different types of tourism from ecotourism and indigenous tourism, to agritourism and geotourism, and seems to provide the best framework for tourism development at Pilgrim.

In preparing to design a future sustainable tourism development at Pilgrim, Rasmussen and Koroleva (2003) in *Social and Environmental Impacts in the North*, have a laudable list of recommendations that will help to develop Pilgrim Hot Springs appropriately within an eco-tourism framework which also considers geotourism concepts:

1. **Favor projects of small size**
2. **Pay attention to the site and its relation to religion and tradition**
3. **Involve representatives of the indigenous population and their exceptional knowledge of the environment**
4. **Arrange for training of the indigenous population in their local language and culture**
5. **Adapt to the rhythm of salaried jobs to the seasons and local conditions so subsistence activities can be maintained**
6. **Give responsibilities and margin of initiative to indigenous populations**
7. **Respect the values expressed by the indigenous populations**
8. **Have regular evaluations**

**Design Implications**

- **Historical inspiration for design**
- **Restoration where possible**
- **Educational opportunities**

- **Design: Cultural celebration**
- **Cultural community spaces**
- **Educational opportunities**

- **Low Impact Development**
- **Educational opportunities**

- **Maximize direct use opportunities**
- **Possible to operate off the grid**
- **Heat for buildings & greenhouses**

- **Smaller size projects are good**
- **Must be community driven**
- **Utilize multiple tourism types**
Case reviews are an important component of design research because they outline best management practices, offer inspiration, clarify, and answer design questions which then help guide the design process. Because the project’s location is part of the Arctic ecosystem, the case studies are all located in or near the Arctic.

New-born moose calf spotted along the Kougarak highway.
The literature review and the author’s applied design philosophy helped to formulate the following selection criteria which were developed from the three major components of sustainability:

**Environmental Stewardship, Sociocultural Equity, and Economic Viability.**

<table>
<thead>
<tr>
<th><strong>SUSTAINABILITY</strong></th>
<th><strong>CRITERIA</strong></th>
<th><strong>QUESTIONS TO ADDRESS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Ecosystem Sensitivity</td>
<td>Does the project enhance the ecology of the site and support biodiversity?</td>
</tr>
<tr>
<td>Stewardship</td>
<td>Sustainable Building Design</td>
<td>Does the project operate with renewable energy and follow LEED building standards?</td>
</tr>
<tr>
<td></td>
<td>Agricultural Practices</td>
<td>Do they grow their own food? Do guests participate?</td>
</tr>
<tr>
<td>Sociocultural</td>
<td>Indigenous Connection</td>
<td>Does the project involve the local culture and place managerial power in their hands?</td>
</tr>
<tr>
<td>Equity</td>
<td>Historical Connection</td>
<td>Does the project have historical significance?</td>
</tr>
<tr>
<td></td>
<td>Educational Programming</td>
<td>Does the project provide education concerning historical, cultural and environmental elements?</td>
</tr>
<tr>
<td>Economic</td>
<td>Visitor Experience:</td>
<td>Is the project economically viable?</td>
</tr>
<tr>
<td>Viability</td>
<td>Accessibility</td>
<td>How do you get to the site?</td>
</tr>
<tr>
<td></td>
<td>Amenities</td>
<td>What is the size of the project? How many guests does it accommodate and how?</td>
</tr>
<tr>
<td></td>
<td>Activities</td>
<td>Does the project function in all seasons and what are the activities they provide?</td>
</tr>
</tbody>
</table>
With the aid of the above selection criteria, the following case reviews were chosen and organized into three topics: Hot Spring Sites, Indigenous Inspired resorts, and Agritourism. As there is no case study which met all of the selection criteria, in the following pages, a quick overview of each project is provided, strengths based on the selection criteria are discussed, and notable design features are highlighted, all of which have inspired the design of the Pilgrim Hot Springs’ Master Plan.

**HOT SPRING SITES**
- Chena Hot Springs, Fairbanks, Alaska
- Manley Hot Springs, Alaska, USA
- Tolovana Hot Springs, Alaska, USA
- Liard Hot Springs, British Columbia, Canada
- Blue Lagoon, Reykjavik, Iceland

**INDIGENOUS INSPIRED RESORTS**
- Hotel Kakslauttanan, Finland
- Cree Village Ecolodge, Ontario, Canada

**AGRITOURISM**
- Stepping Stone Heritage Farm Nova Scotia, Canada
- Willing Workers on Organic Farms (WWOOF)
LOCATION: 60 miles north of Fairbanks, Alaska

SIZE: 450 acres

DESIGNER/MANAGEMENT: Bernie Karl

ENVIRONMENTAL STEWARDSHIP:

It appeared evident that Chena Hot Springs (CHS) is dedicated to sustainable development. It is one of the forerunners in the field of geothermal energy production for small scale facilities and is the lowest temperature geothermal resource to be used for commercial power production in the world. It hosts numerous research operations and has an entire room dedicated to the presentation of research findings. The goal of CHS is to become a self-sustaining community. Due to its relatively remote location, the ability to produce its own geothermal energy is half the battle. The other half is developing greater food production independence, and with the recent construction of a 4320 ft² geothermal heated greenhouse, they are well on their way. Able to provide their restaurant with year round fresh produce even when temperatures drop below -56°F, CHS is a great working example of how geothermal energy in the arctic can not only provide energy and building heat, but also fresh produce. Opportunities for visitors to educate themselves are evidenced across the resort campus and may in fact trump proper function and aesthetic cohesion of the campus for the visitor.
SOCIOCULTURAL EQUITY:

Having celebrated its 100 year anniversary in 2005, CHS is proud of its centennial standing. Many a landscape sculpture representing CHS’s gold mining past can be found on the campus holding showy perennial flowers. Log cabins with green roofs epitomize the Alaskan homestead aesthetic. There seems to be no known knowledge of native Athabaskan connection to the site even though the site lies within traditional Athabaskan territory.

ECONOMIC VIABILITY:

CHS operates year round. They take advantage of the long summer nights and offer guests multiple housing options from a rustic campground and an RV park, to a night in the hotel lodge. In winter, the chance to soak in warm waters and see the Aurora Borealis above brings many visitors especially from Japan. CHS offers an array of multi-season activities from educational tours, dog kennel visits, and the ice museum to offering seasonally specific activities like hiking and ATV tours in summer and skiing and dog-mushing in winter. Looking at the Visitor Experience table to the right, accessibility, amenities, and activities are all very amenable to a tourist and contribute to the resort’s economic vitality. They also have space to host large events: the Activitorium.

<table>
<thead>
<tr>
<th>VISITOR EXPERIENCE TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCESSIBILITY</strong></td>
</tr>
<tr>
<td>- 60 miles of paved road to the site</td>
</tr>
<tr>
<td>- shuttle options from Fairbanks</td>
</tr>
<tr>
<td>- Airstrip</td>
</tr>
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<td></td>
</tr>
</tbody>
</table>
DESIGN IMPLICATIONS:

CHS is the most useful case study to this master’s report because it takes the potential at Pilgrim Hot Springs for a sustainable geothermal resort development in the Arctic and proves that such a project is possible. Chena Hot Springs is an excellent example of Environmental Stewardship and Economic Viability and designs for the Pilgrim Hot Spring Master plan will heavily reflect the goals of CHS to be energy self-sufficient, green-building design conscious, and visitor-activity-friendly. Also the concept of the hoop house for their geothermal greenhouse is certainly one to consider since they have done quite a bit of successful geothermal greenhouse research with that particular design. Another implication for design is looking at how every aspect of the CHS resort offers educational opportunities for the visitor to learn about geothermal energy and various other renewable research activities happening through hosting tours of the geothermal energy production station and the greenhouse, to providing a space for interactive research displays and hand-outs. Though CHS falls short of exploring the cultural connection with the Athabaskan people, the subtle historic connection to gold mining found in the old tool artistic displays throughout the campus is quite clever. They are very community-minded, however, and host large community events throughout the year that bring locals from Fairbanks to participate in such events as the Green Energy Fair for example. They also allow for bike races that enjoy finishing at the Chena pools. Designing for multiple housing options like they have at Chena is also important to consider, however placement of the different housing types and the other land uses of the campus will be better planned learning from the shortcomings of CHS’s campus layout.
**MANLEY HOT SPRINGS**

**LOCATION:** 160 miles north of Fairbanks, Alaska  
**SIZE:** 450 acres  
**DESIGNER/MANAGEMENT:** Dart-AM, LLC

**ENVIRONMENTAL STEWARDSHIP:**

The owners managing the Manley Hot Spring soaking pools (Manley Greenhouses) are a private agriculture and stone mining company dedicated to exploring geothermal technology and utilizing a green design philosophy. Though there are no overnight visitor accommodations where the pools are, Dart-AM has plans to build guest cabins once the farm and high tunnel geothermal greenhouses are established.

**SOCIOCULTURAL EQUITY:**

Because the Manley Hot Spring pools are rather underdeveloped at the moment, this criterion is rather moot as is providing a Visitor Experience Table. However, on the website of Dart-AM, LLC, they do have an extensive historic understanding of the site and information regarding their geothermal technology research that, perhaps in the future, a historic connection and an educational component could exist there.
ECONOMIC VIABILITY:

At the moment, the Darts do not publicize their pools, although wondering visitors, who come to Manley Hot Springs to soak, can find out from local businesses where the Manley Greenhouses hot spring pools are. They must then find the Darts and pay $5 to soak for a two-hour period. Visitors know of these pools and come searching for them because the pools are located in a greenhouse where grapes and pears grow and it is said that visitors can pluck fruits from the vine while soaking in one of three pools!

DESIGN IMPLICATIONS:

The high tunnel greenhouse design is similar to the CHS Hoop House design. Both concepts offer design implications for greenhouse construction at Pilgrim. Above all, it is the concept of placing pools within the greenhouse that is most unique and worthy of consideration for the Pilgrim Hot Spring Master Plan.
LOCATION: 45 air miles northwest of Fairbanks, Alaska

DESIGNER/MANAGEMENT: Tolovana Hot Springs Ltd.

ENVIRONMENTAL STEWARDSHIP:

The Tolovana Experience is a management philosophy at Tolovana that is dedicated to preserving the natural, rustic, and simple qualities that the springs already possess. Their goal is to provide the visitor with low impact access and accommodations that require self-sufficiency on the part of the visitor so that visitors can enjoy the wilderness and help preserve the resources for future generations. Visitors are required to follow simple rules and must make reservations in order to visit.

SOCIOCULTURAL EQUITY:

There does not seem to be any mention of connections to culture or history and environmental education is garnered through the hands-on experience of getting to the remote site, burning wood, hauling drinking water, using outhouses, and following the low-impact rules of the Tolovana Experience.
ECONOMIC VIABILITY:

Tolovana operates through a reservation system and because there are no roads to the site, the visitor must be self-sufficient and able to handle backcountry travel. Due to the small scale of the site, intimate accommodations, and appeal to only skilled backcountry visitor-types, this hot spring most likely does a good job of making enough money to care for the facilities but perhaps not enough to make a real profit.

DESIGN IMPLICATIONS:

Tolovana’s remote setting is similar to Pilgrim’s and offers a different perspective concerning visitor access possibilities. Also, the site uses different tub designs: natural vs. wood (cedar), and circular vs. rectangular shapes. All of the tubs are situated so that no other tub or cabin is visible to each other thus providing a pleasant secluded and intimate experience. How tubs are positioned and placed contributes to the feel of the place. The feel of Tolovana Hot Springs is rustic, simple, and natural. To help reinvent Pilgrim Hot Springs’ sense of place, thoughtful placement and design of soaking pools will be important.

<table>
<thead>
<tr>
<th>ACCESSIBILITY</th>
<th>AMENITIES</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No road access</td>
<td>• 3 rustic cabins w/outhouses</td>
<td>• hiking</td>
</tr>
<tr>
<td>• In summer: bush plane or hike-in (10 miles)</td>
<td>• 3 open air tubs</td>
<td>• canoeing</td>
</tr>
<tr>
<td>• In Winter: Snow-machine or cross-country ski-in</td>
<td></td>
<td>• skiing</td>
</tr>
</tbody>
</table>

Skiing-in to Tolovana Hot Springs.

The long pool in winter at Tolovana Hot Springs.

Lodging under the Northern Lights at Tolovana Hot Springs.
**LIARD HOT SPRINGS**

**LOCATION:** Mile 475 on the Alaska Highway between Fort Nelson and Watson Lake

**SIZE:** 3335 ft²
**DESIGNER:** Alfred Waugh
**MANAGEMENT:** BC Parks: Liard River Hot Springs Provincial Park, the Muskwa-Kechika Management Area

**ENVIRONMENTAL STEWARDSHIP:**

British Columbia Parks protect internationally significant ecological, cultural and natural landscape features located in the province. Their goal is to protect these areas for world class conservation, outdoor recreation, education and scientific study. At Liard Hot Springs, close attention is paid to protecting the fragile muskeg (bogland) with the installation of 300 meters of wooden boardwalk that takes the visitor through the warm water swamp and boreal forest before depositing them at the hot spring pools.

**SOCIOCULTURAL EQUITY:**

Unlike private land-owners, provincial parks are mandated to educate the visitor about the history and cultural ties of the park. Interpretation and education is achieved through offering guided walks and signage.
ECONOMIC VIABILITY:

Liard Hot Springs receives the heaviest use of any park in the northern BC region and provides one of the most popular campgrounds for travelers on the Alcan highway, serving both regional residents and tourists. Due its popularity, Liard recieves quite a bit of national funding and can support itself through visitor donations, day-use and campground fees.

DESIGN IMPLICATIONS:

The characteristics of the Pilgrim and Liard hot springs are very similar in that unlike most other hot springs which flow directly into a nearby river or creek, both Pilgrim and Liard have an intricate system of swamps that contribute to the unique vegetative community that thrives at each site. Boardwalks are simple and elegant and fairly easy to maintain and would be a good option for circulation paths at Pilgrim. Also, the park uses a zoning plan to balance protecting the environment with visitor recreation: Special Feature Zone, Intensive Recreation Zone, and Natural Environment Zone. This is a useful planning tool that would benefit the design of the Pilgrim Hot Spring Master Plan.

VISITOR EXPERIENCE TABLE

<table>
<thead>
<tr>
<th>ACCESSIBILITY</th>
<th>AMENITIES</th>
<th>ACTIVITIES</th>
</tr>
</thead>
</table>
| Accessible from the Alcan Highway | • 52 unit Campground  
|                     | • 2 bathing pools  
|                     | • Wheelchair accessible  
|                     | • Playground  
|                     | • Composting outhouses  
|                     | • Nearby privately-owned lodge and restaurant | • soaking  
|                     |                                              | • wildlife viewing  
|                     |                                              | • hiking  
|                     |                                              | • biking  

Boardwalks at Liard Hot Springs.  
Wintertime at Liard Hot Springs.  
A cascading waterfall at the Liard Hot Springs’ Alpha pool.  
Background: changing station at Liard Hot Springs.
**BLUE LAGOON**

**LOCATION:** 45 minute car ride from Reykjavik, Iceland

**DESIGNER/MANAGEMENT:**
Sigriour Sigborsdottir: Basalt architects

**ENVIRONMENTAL STEWARDSHIP:**

Blue Lagoon is 100% powered by geothermal energy and is a leading company in terms of thinking green in all aspects of their business. The design philosophy at Blue Lagoon is termed the EcoCycle: where nature and science work in harmony, with as little environmental impact as possible. Blue Lagoon is part of the Svartsengi Resource Park, a concept based on ecological balance, economic prosperity and social progress. Most notably, they have been awarded the Blue Flag award, one of the most stringent environmental certifications based on coastal and inland protection. The aim of the architectural design of the spa and clinic was to “protect the environment and respect its geological history. Pure Icelandic materials from moss and stones characterize the design. We wanted to emphasize the relationship between nature and the man-made”.

**SOCIOCULTURAL EQUITY:** Blue Lagoon offers guided history tours that also include information on the volcanic history of the area and share stories of Icelandic folklore.
ECONOMIC VIABILITY:

Blue Lagoon is a high-end health-related tourism resort. They achieve high economic status because of both their commitment to the environment and to their research and development of the geothermal hot spring in relation to skin ailments. They also understand how to make a place relaxing and enjoyable to visitors and can accommodate large events like weddings and corporate meetings.

DESIGN IMPLICATIONS:

Blue Lagoon is a model mid-sized sustainable health-related tourism resort. There is much to take away from their design philosophy and attention to using only local materials that not only reflect the local landscape but also help blend the buildings into that landscape. There is a 200 meter footpath that cuts through lava rock and a lava rock wall that helps connect the man-made elements with the landscape. Hot Springs are inherently about relaxation and healing and the designs at Pilgrim should aim to create that sense of peace and healing as Blue Lagoon is able to do, even while they educate.

<table>
<thead>
<tr>
<th>VISITOR EXPERIENCE TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCESSIBILITY</strong></td>
</tr>
<tr>
<td>20 min. drive from airport</td>
</tr>
<tr>
<td>Bus transfers available</td>
</tr>
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Bridge close-up.  
Blut Lagoon soakers with the Svarsengi Power Plant in the background.  
Floating boardwalks at The Blue Lagoon.  
Background: Soaking at The Blue Lagoon.
LOCATION: Saariselka, Finland near Urho Kekkonen National Park

DESIGNER/MANAGEMENT:
Jussi Eiramo
Igloo Design help: Quantum Glass

ENVIRONMENTAL STEWARDSHIP:

Kakslauttanen is committed to offering unique tourism opportunities in the remote area of Lapland, Finland in a responsible manner. The hotel and business is designed to make the most out of the environment whilst preserving it. All activities provided operate under a leave-no-trace policy and snowmobile use is limited to trails in order to preserve the wilderness. They support local transportation business and use local food products. Most buildings on the campus are built to be energy efficient, most notable are the glass igloos which are unique to this establishment. They use efficient radiant heat technology that not only provides visitors with a frost-free view of northern skies and the Aurora but also keeps them comfortably warm.

SOCIOCULTURAL EQUITY:

Kakslauttanen is proud of the heritage of Lapland and takes every opportunity to educate the visitor, by providing Lappish meal specialties of reindeer, king crab, and fish from the Arctic Ocean in their main restaurant to offering an evening with the Sami people at the Kota restaurant where visitors can eat and hear stories about life in Lapland and the Sami culture, from Sami people. There is also the Siida Museum dedicated to Sami heritage which involves a guided tour to visit Lake Inari, and other holy places of the Sami people prior to visiting the museum. Kakslauttanen also hosts the Reindeer Olympics which celebrates traditional Lappish activities from reindeer lassoing to skiing competitions. They also teach visitors the Lappish art of berry and mushroom picking.
**ECONOMIC VIABILITY:**

Because of the remote location of Kakslauttanen, there are many unique activities for all seasons offered to keep visitors busy and engaged in the Lapland landscape. There are a variety of accommodations from traditional log cabins to snow igloos and custom-made glass igloos so visitors are enticed to try different sleeping arrangements. Kakslauttanen hosts the largest smoke sauna in the world and operates year-round. They are committed to the local economy and enjoy economic benefits that enable them to build new projects like Santa’s Resort which will now enable them to host large conferences and concert events.

<table>
<thead>
<tr>
<th>Visitor Experience Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACCESSIBILITY</strong></td>
</tr>
<tr>
<td>• Ivalo airport</td>
</tr>
<tr>
<td>35k away</td>
</tr>
<tr>
<td>• Buses to hotel</td>
</tr>
<tr>
<td>available</td>
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<td></td>
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**DESIGN IMPLICATIONS:**

Though not entirely dedicated to renewable energy and working to make their campus operate off the grid, there is a lot to take from Hotel Kakslauttanen in terms of how they satisfy the Social-Cultural equity criteria avoiding repetition by not only educating visitors on the Sami and Finnish cultures through food options, museum, and guided tours but also by taking some of their cultural design cues with the establishment of the smoke sauna campus space, the architecture of the Kota Restaurants and the igloos. The variety of activities and sleeping arrangements offered is key to Kakslauttanen’s economic success and consideration of what activities could be offered at Pilgrim will be an important part of the design process.
CREE VILLAGE ECOLODGE

LOCATION: Moose Factory Island, Ontario
SIZE: 16,000 ft²
DESIGNER: Levitt Architect Limited & Blackwell Bowick Engineers
MANAGEMENT: The MoCreebec First Nation

ENVIRONMENTAL STEWARDSHIP:

The lodge’s design is based on traditional Cree motifs and uses all natural, non-toxic materials. It also includes many water-saving and energy efficient features which are important in a cold climate. From low-flush or composting toilets, to building with only local materials and purchasing only natural products, the desire to have a limited impact on the land is evident at the ecolodge and it is a shining example of responsible tourism that is accountable to the Indigenous people and the environment.

SOCIOCULTURAL EQUITY:

Cree Village is the first aboriginal owned and operated ecolodge in the U.S. or Canada. Wanting to bring an Indigenous perspective to the future of tourism in the sub-Arctic region, the MoCreebec First Nation’s approach has been to reflect positively in design and experience, the cultural values and ethic of the Cree Nation’s past, present, and future.
ECONOMIC VIABILITY:

In operation since 2000, Cree Village has sought to create a cultural hospitality and ecological experience that establishes ecotourism as a viable example of sustainable development for the MoCreebec people. The community aims to make Cree Village Ecolodge a world class facility, experience, and positive reflection space to celebrate cultural and biological diversity of the natural world. Voted one of 17 Best Eco Lodges in the World by thedailygreen.com.

<table>
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<tr>
<th>VISITOR EXPERIENCE TABLE</th>
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</thead>
<tbody>
<tr>
<td><strong>ACCESSIBILITY</strong></td>
</tr>
<tr>
<td>• Accessible by air, rail service, and water taxi</td>
</tr>
<tr>
<td>• winter time: ice road for trucks</td>
</tr>
</tbody>
</table>

DESIGN IMPLICATIONS:

The Pilgrim Hot Spring Master plan will reflect Inupiaq motifs that should be apparent not only in building design but also in the layout of the site itself. Lastly Unaataq LLC should consider creating a business model similar to what the MoCreebec Council has done at Cree Village Ecolodge.
ENVIRONMENTAL STEWARDSHIP & SOCIOCULTURAL EQUITY:

Stepping Stone Heritage Farm is dedicated to organic farming, including preserving heritage breeds of farm animals living on their land. They are small, utilize mixed-farming techniques and prefer the use of old-fashioned approaches to agriculture since it has worked well for them during the 70 plus years they have been operating. Above all they are dedicated to educating visitors about where food comes from and that the farmer has great value.

ECONOMIC VIABILITY:

Stepping Stone offers a variety of stay options from a working visit to a simple holiday farm stay. They offer a variety of amenities and due to their location, activities on and off the farm are abundant and are very attractive to the tourist. Their motto is “So much to do OR so little to do…it is up to you!”

VISITOR EXPERIENCE TABLE

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<thead>
<tr>
<th>ACCESSIBILITY</th>
<th>AMENITIES</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Accessible by car</td>
<td>• Comfortable rooms with private baths</td>
<td>• farming</td>
</tr>
<tr>
<td>• located near municipal airport</td>
<td>• hot-tub</td>
<td>• hiking</td>
</tr>
<tr>
<td></td>
<td>• healthy meals</td>
<td>• numerous museums</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• golf course nearby</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• skiing (in winter)</td>
</tr>
</tbody>
</table>

DESIGN IMPLICATIONS:

Involving tourist in farming activities at Pilgrim is not only an opportunity to get help with the agriculture but also a chance to join Stepping Stone in the effort to re-educate the populace on where fresh food comes from. By providing simple accommodation and the promise of a healthy meal, tourist will be content relaxing in a peaceful agricultural environment.
LOCATION: All over the world

ENVIRONMENTAL STEWARDSHIP & SOCIOCULTURAL EQUITY:

World Wide Opportunities on Organic Farms (WWOOF and formerly known as Willing Workers on Organic Farms) links volunteers and organic farmers together in order to teach and share sustainable living practices. Because WWOOFing happens all over the world, volunteers are able to not only learn about farming but about different cultures as well. WWOOFers help plant, harvest, build greenhouses and other structures, clear land, compost, whatever the partnering farm needs done.

ECONOMIC VIABILITY:

While there is no monetary exchange, volunteers work a 4 to 5 hour day in exchange for comfortable housing and three fresh meals a day, and the opportunity to be working in a new country. The farm in return gains substantial help on the farm which contributes to an economic return at harvest time.

DESIGN IMPLICATIONS:

Establishing a WWOOFing site at Pilgrim would help establish agriculture at the site and contribute to not only the education of farming but also sustainable living. Lodging arrangements for WWOOFers would need to be considered as well as budgeting for their meals.
SITE ANALYSIS
A crucial part of the design story...

Nome, Alaska, is an hour and a half commercial flight from Anchorage. Summers on the Seward Peninsula are often unpredictable. Either they are beautiful and filled with sunshine 24 hours a day while others are grey, misty, and hounded by constant drizzle. The Pilgrim Hot Spring’s visit was scheduled and planned for rain or shine. Upon arrival, heavy clouds greeted the arriving passengers...

The following day, friends drove friends to Pilgrim Hot Springs. The truck was painted in raindrops but after the hour long drive to the Pilgrim Hot Springs turn off and as the vehicle wound around the hilly landscape and descended into the valley where Pilgrim was located, the sun came out.

Two full days were spent at Pilgrim to conduct site analysis and not a drop of rain fell. In addition to extensive photographic site documentation, informal interviews with those living on the site or working as researchers, were also conducted. After two days of sunshine and wildflowers, passage back to Nome was shared with a researcher.

Pilgrim Hot Springs is a very unique place, drawing many to either enjoy, study, work, or plan for the site’s future. In Nome, a meeting with one of the landowners was scheduled. Historical documents were shared, questions answered, and a few hopes and dreams for the site were discussed. An interview with the child of one of the orphan students unfolded in a local diner.

This site visit was the most important part of the master’s report design process. Without it, the sense of place would not have been understood and the project would have been difficult to undertake. It could not have happened without the help of friends new and old, the University of Arizona’s Peace Corps Fellows Program, CAPLA, the National Park Service, and Alaska Center for Energy and Power.
Entrance

Descending into the valley....

Abandoned at the entrance

Tundra hills....

Plarmigans in the road...

The cabins at the site entrance
Views in

Looking into the central hot spring pond...
The Mission Complex

Cottonwoods leading to the cemetery...
The rickety hot tub...
View from the pool: 
The Kigluaik Mountains

Looking north at Hen and Chicken mountain...

Hen & Chicken from the historic windmill site...

View to the East

Hen & Chicken Close-up
Seasons

Entry Gate in autumn...

Winter...looking at the Kigluaiks

Summer looking east

Spring Kigluaiks
Cow parsnip: edible and poisonous...

Crow berry: high in pectin

Bistort: edible

Gnarly cottonwoods & fireweed

Beautiful arctic iris

Flower arrangement: Fireweed, bluebells, cow parsnip, arctic dock
**Restoration, reconstruction, or rehabilitation?**

Because this project is looking at the possibility of turning the property into an eco-tourism attraction, rehabilitation and a combination of reconstruction and restoration would likely be most appropriate. There were structures that once existed, like greenhouses and stables, which could be useful once again. If new development is necessary, it should have a compatible design aesthetic with the existing structures and consider integrating Inupiaq design motifs. Utilizing these techniques and design cues, would then help in the preservation of the entire property.
These are the sites of historic significance and they will be utilized in the final plan because their locations offer insight into past use of the property, how the site could be used again in the same way, or offer what can be changed from past endeavors to make visiting the site even better. Historic sites are a major source of inspiration for the design. Items like the windmill could be reinstated and agricultural fields used again. The current pool should be improved and soaking opportunities expanded.
The former ‘Our Lady of the Lourdes’ Mission-Orphanage Complex
According to the current land management plan, no motor vehicles will be allowed to enter the property. If agriculture and a geothermal energy facility were to be located on the premise, motor vehicles to establish these uses would need to be permitted, and future need of agricultural equipment would need to revert to old-fashioned techniques with horse and cart.

Most of the existing trails were established by ATV use during geothermal exploration. They could be used to help establish a pedestrian trail system to accommodate future hiking and wildlife viewing activities.

The road into Pilgrim will have to be maintained and/or a shuttle service established from Nome.
Looking at the research conducted by Alaska Center for Energy and Power, the geothermal anomaly, or system, present at Pilgrim can be better understood and design implications extracted. The images on this page illustrate the extent of heat on the site and the temperatures available. Where research was conducted is also helpful to the design process for if it is known where land was already disturbed, as is the case with the ATV trails that were created, designs can be generated to work with the already disturbed land. Instead of creating new disruption, perhaps where drill holes were made, future hot tub pools could be placed...
Hydrology & Flooding

The site has everything to do with water from hot geothermal temperatures, to nearby cold river water that freezes over during the winter and floods in the spring. Knowing where water tends to collect and when it does during the year, has design implications for where to develop or not and if so, how will flooding influence the design of new built structures? Water has an important presence and should be protected, respected and celebrated by the design.
This site has very unique botanical resources that are not found anywhere else in the region (i.e. ferns below). This is due to the hydrology of the site and the geothermal anomaly that exists there. A riparian forest of cottonwoods snakes through the site following the water course respectively. Wildflowers are abundant and bring colorful biologically diverse arrangements that change with the seasons. Because the earth stays warmer here during the winter months, wildlife can be found year-round. Looking at the larger context, vegetation diversity increases and will offer great educational opportunities to learn about the delicate Arctic ecosystem from tussock tundra to permafrost protecting sphagnum moss, and the wildflowers that bring not only beauty but sustenance to humans and animals alike.
The founding members of Unaataq, LLC, are Bering Straits Native Corporation, Kawerak, Inc., Norton Sound Development Corporation and Sitnasuak Native Corporation (each owning a 23.08% Percentage Interest in the Company), and Mary’s Igloo Native Corporation, Teller Native Corporation, and White Mountain Native Corporation (each owning a 2.56% Percentage Interest in the Company). Bering this in mind, the above map shows Pilgrim surrounded by Mary’s Igloo land and further surrounding land ownership shared by Mary’s Igloo and BSNC. BSNC, as one of the chief shareholders, is also the managing member of the property. Private land tends to be concentrated along on the Kougarok highway. The map to the right depicts the distance relationship between Serpentine Hot Springs and Pilgrim, showing a possible future in hot spring tourism on the Seward Peninsula since two accessible hot spring sites already exist in reasonably close proximity.
Ecotourism is one of the fastest growing segments in the tourism industry and the Seward Peninsula, though lacking in money, is rich in culture, history, and natural beauty. With one of the highest unemployment rates in Alaska at 14% and a Native American majority of 75.2%, eco and cultural tourism is an underutilized...
The Seward Peninsula has a lot of tourism opportunities and because of Pilgrim’s central location on the peninsula, Pilgrim Hot Springs could become a leader in sustainable tourism, a base camp, helping to unite the many tourism opportunities to benefit the larger community.

Anchorage already operating and an extensive road system stemming from Nome, poor marketing and lack of diversity in developed attractions and tours hamper year round tourism potential according to an Alaska Department of Transportation Nome Tourism study.
Pilgrim Hot Springs is a 320 acre property. Due to its size, the scope of this project is to create a conceptual Master Plan that makes suggestions for future areas of development at the site. Also included is a detailed concept plan of the former Our Lady of the Lourdes Mission-Orphanage complex, the title simplified and for the purposes of this Master’s Report referred to as the Mission Complex. Nine vignettes help illustrate the look and feel of the different areas of suggested development and a final perspective of an interpretive sign helps convey the importance of education to this project.

Although the literature review is discussed at the beginning of this Master’s Report, in actuality it was the site visit that occurred first and the visit that helped develop the topics to be researched in the literature review.

Literature review research cast a wide net to help understand the larger context of elements acting on the site and culminated in the development of a broad list of design implications and a list of selection criteria for selecting case reviews.

Case review research generated inspiration and helped to develop additional design implications at a more detailed level.

Finally site analysis, coupled with the knowledge garnered from the literature and case reviews, took an in-depth approach to understanding the property. What evolved from the site analysis is a better understanding of what the property is capable of handling and how best to propose development at the site that will be cost-effective, ecologically sensitive, culturally and historically driven, and educative to the future visitors to the site that will help Pilgrim Hot Springs last into the future.
To help convey the design process, the story bracelet, an Iñupiaq pictographic narrative art-form, is shown here to illustrate the story of the Pilgrim Hot Springs Master Plan design. This bracelet exemplifies the close relationship between the Iñupiaq worldview and their love of storytelling and oral tradition.

As discussed in the introduction, there are many layers to Pilgrim Hot Springs, not only layers of history and culture, but also layers of development potential. In the previous pages computer generated ivory carving images of these layers have accompanied the title pages. Similar to how a bracelet is formed and pieced together with a single string and eventually formed into the shape of a circle- as shown here again, the design of Pilgrim Hot Springs is about stringing these pieces together: the history, Iñupiaq culture, arctic ecology, geothermal energy, tourism potential, the site analysis. The final design is like a bracelet linking these layers together to tell the next potential story at Pilgrim Hot Springs: an ecotourism destination; a base camp from which to access all other tourism opportunities on the Seward Peninsula because it is centrally located. This design, if implemented at Pilgrim Hot Springs, will help bring a more cohesive and environmentally sensitive tourism model to the region. It will embrace history and Iñupiaq culture, seek always to preserve the arctic beauty of the landscape, and finally, aim to educate future tourists for sharing knowledge is the key to true sustainability.
The synthesis diagram to the left highlights the opportunities and constraints of the site: the existing infrastructure and circulation, hydrology, and buildable land which is based on the ecology of the site. With these variables in mind -- in addition to an emphasis suggesting the development of an ecotourism destination -- recreation and conservation will be important to integrate into the site. In many cases however, development of a sustainable ecotourism resort pits conservation and recreation goals against each other. In the development of an overall concept and design philosophy for the site, interpretation was seen as a way to help balance recreation and conservation on the site. The above graphic demonstrates how recreation and conservation can be balanced and integrated if they are held together by the goal of education through interpretation. From another perspective, imagine that a seal, an important animal to the Inupiaq, represents education. It has swallowed conservation and recreation and they must coexist in the stomach of the seal and be digested together...
The final concept on the right is a combination of the three concepts below. While these concepts focus on how conservation and recreation will be used on the land, the concept of education serving as an overarching goal above the two will be demonstrated in the final design through interpretation, integration of cultural motifs, and space programming.

1. Production-centric: This concept focuses on the production capabilities of Pilgrim: agriculture and geothermal energy. This concept focuses on developing historic agriculture fields, greenhouses, and a large geothermal energy plant that would contribute to the Nome energy grid.

2. Eco-centric: This concept is conservation-focused leaving most of the land undeveloped and set aside for wildlife habitat and landscape preservation areas. Development would be concentrated where it already exists and where land is already disturbed.

3. Recreation-centric: This concept would maximize the use of buildable land employing a dispersed-use development structure in order to provide multiple recreational possibilities. It would utilize all existing structures and reconstruct where needed.
## The Program

<table>
<thead>
<tr>
<th>Use/Function</th>
<th>Quantity</th>
<th>Occupancy</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community lodge</strong></td>
<td>1</td>
<td>100</td>
<td>Use site of existing old dorms and utilities bld.</td>
</tr>
<tr>
<td><strong>Restaurant</strong></td>
<td>1</td>
<td>30</td>
<td>Renovated church</td>
</tr>
<tr>
<td><strong>Cabins</strong></td>
<td>6</td>
<td>24</td>
<td>Mini 200ft²</td>
</tr>
<tr>
<td><strong>Yurts</strong></td>
<td>4</td>
<td>16</td>
<td>(12’di) 113ft²</td>
</tr>
<tr>
<td><strong>Specialty architecture</strong></td>
<td>1</td>
<td>4-6</td>
<td>(6x3/p)108ft²</td>
</tr>
<tr>
<td><strong>Summer: sod house &amp; conical tents</strong></td>
<td>2</td>
<td>4 for Sub tent/igloo</td>
<td></td>
</tr>
<tr>
<td><strong>Winter: igloos &amp; subterranean wood house</strong></td>
<td>2</td>
<td>(6x2/p)48 ft²</td>
<td></td>
</tr>
<tr>
<td><strong>Campground</strong></td>
<td>1</td>
<td>24 tents</td>
<td>Dispersed or 12 ft²/person = 72ft²</td>
</tr>
<tr>
<td><strong>Ag fields</strong></td>
<td>4</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Green houses</strong></td>
<td>2</td>
<td>n/a</td>
<td>4000ft²-large</td>
</tr>
<tr>
<td><strong>Natural Pool/Bathhouse</strong></td>
<td>1</td>
<td>15-20</td>
<td>(15x9) 135 ft²</td>
</tr>
<tr>
<td><strong>Tubs</strong></td>
<td>6</td>
<td>2-4</td>
<td>60” circle</td>
</tr>
<tr>
<td><strong>Activity Center</strong></td>
<td>1</td>
<td>10</td>
<td>Renovated nun’s quarters?</td>
</tr>
</tbody>
</table>

- Community lodge: Large gathering space, Dorm style guest rooms
- Restaurant: Green house grown food service
- Cabins: Sleeping
- Yurts: Living/sleeping
- Specialty architecture: Summer: sod house & conical tents, Winter: igloos & subterranean wood house
- Campground: Sleeping
- Ag fields: Ag production
- Green houses: Yr-round Food for Restaurant
- Natural Pool/Bathhouse: Community soaking
- Tubs: soaking
- Activity Center: Equipment Rental Tour reservations
<table>
<thead>
<tr>
<th>Dog Kennel</th>
<th>Dog team housing</th>
<th>40 houses</th>
<th>40 dogs</th>
<th>(9 ft²/dog) 360ft²</th>
</tr>
</thead>
<tbody>
<tr>
<td>helipad</td>
<td>Flight seeing</td>
<td>2 helicopters at a time</td>
<td>Fixed wing 6-8 ppl</td>
<td>40’ x 40’</td>
</tr>
<tr>
<td></td>
<td>Heli-skiing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wildlife Viewing Trail</td>
<td>Conservation</td>
<td>n/a</td>
<td>n/a</td>
<td>The majority of the site</td>
</tr>
<tr>
<td></td>
<td>Wildlife viewing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hiking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hiking Trails</td>
<td>Boardwalk &amp; dirt</td>
<td>2 big hikes: H&amp;C, Kigs 2mi trails on site</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Picnic area</td>
<td>day trippers</td>
<td>4 tables</td>
<td>15-20</td>
<td>300ft²</td>
</tr>
<tr>
<td>Playground</td>
<td>Children’s play area</td>
<td>1</td>
<td>15</td>
<td>200ft²</td>
</tr>
<tr>
<td>Boating beach</td>
<td>Boat launch and windmill</td>
<td>1</td>
<td>6 boats max</td>
<td>NW beach just off site</td>
</tr>
<tr>
<td>Geothermal Power Plant</td>
<td>Energy production</td>
<td>1</td>
<td>n/a</td>
<td>400kW-</td>
</tr>
<tr>
<td></td>
<td>Heating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-injection well Pump House</td>
<td>Hot spring water reintert</td>
<td>1</td>
<td>n/a</td>
<td>100ft²</td>
</tr>
<tr>
<td>Windmill</td>
<td>Pump water from River to site</td>
<td>1</td>
<td>n/a</td>
<td>Aermotor windmill: 6’ wheel Diameter 21’ height</td>
</tr>
<tr>
<td>Classroom space</td>
<td>Tourism education</td>
<td>1</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Dirt Road</td>
<td>Trucks/ATVs</td>
<td>1</td>
<td>4 vehicles max</td>
<td>Some portions 12ft Others 8ft</td>
</tr>
<tr>
<td></td>
<td>Facility management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>Cars/trucks</td>
<td>1</td>
<td>10 autos</td>
<td>16x8/auto: 1280 ft²</td>
</tr>
<tr>
<td>Summer Lease Cabins</td>
<td>Leasing</td>
<td>3</td>
<td>6-8</td>
<td>Re-locate existing cabins to SW</td>
</tr>
</tbody>
</table>
The program was developed from what presently exists at Pilgrim (soaking), what existed in the past (agriculture, roadhouse, school), and elements that were successful in the case reviews (multiple lodging options and recreational opportunities).

The compatibility matrix to the right helped located which programmatic elements would be appropriate near each other and which would not be compatible. The bubble diagram on the next page helps to illustrate the compatibility matrix and show the relationship between the major programmatic elements. It would be nice to have agriculture near the restaurant that will use the produce and for the geothermal energy plant to be near the buildings it will supply energy to. Sleeping arrangements would be best near food. Recreation can happen anywhere but shares a strong relationship to geothermal energy because of hot spring soaking. Education has a connection to all of the major elements because, to reiterate, education will help balance recreation and conservation and make development at Pilgrim truly sustainable.
The Final Plan incorporates all of the programmatic elements and by doing so meets the goals and objectives of the Master Plan because it addresses the three major components of Sustainability (Environmental Stewardship, Sociocultural equity, and Economic Viability) in the following ways:

- It brings back agriculture as a land-use where it once existed and where feasible, provides lodging for agriculture volunteers, and employs both in-ground and above ground growing options in the form of geothermal greenhouses. This allows for year-round produce production to serve the resort needs. Any additional produce grown can then be donated or sold.

- In order to preserve as much of the land as possible for conservation and un-spoiled views, new development for recreational purposes is concentrated where a structure either once existed or where land had been disturbed in either the distant or recent past. During all seasons, there are multiple lodging options to satisfy different tourist types and a multitude of activities to satisfy the curious and active local and foreign visitor. Lodging and activity options reflect the rich history of the site and the culture of the Iñupiaq.

- The geothermal springs are utilized to bring year-round energy and heating. They are also celebrated through the provision of multiple soaking options and by leaving the major spring located at the heart of the site un-touched—only viewing decks allow visitors the chance to watch wildlife interact with the spring.

- The plan suggests moving the cabins located at the site entrance to the west to join the other existing cabin there. That way the entrance is made more formal and summer leasers can enjoy a more intimate setting somewhat away from the resort. The summer leasing option helps to not only appease the issue of illegal squatting but it can also help bring early income to the site to help fund the rest of the Master Plan.

- The plan provides several options for cultural exchange of the Iñupiaq: there is an artist in residency program cabin to support Iñupiaq artists; a cultural demonstration area to exhibit Iñupiaq architecture and host large events; Iñupiaq design motifs are incorporated into all new structures and Iñupiaq names are given. And finally, though not able to be graphically shown in the plan, it is the hope of the Master Plan that managerial power to run the future resort will be placed in the hands of the Iñupiaq community.

- Finally the plan is infused with interpretation and education. Behind the lodge is a classroom in order to help teach ecotourism planning to the local community and to provide additional space to host workshops and conferences if the Lodge’s community room is not enough. Every historic site and structure will have an interpretive sign and when coupled with the trail system, tours of history, culture, ecology, and geothermal energy will be enjoyable to program and participate in.
Welcome to Pilgrim Hot Springs’ Arctic Eco Resort! This perspective demonstrates the simple yet inviting and culturally celebratory entrance possibility. Whale bones are traditionally used in Inuiaq architecture and it is theorized that the experience of entering through the whalebone door not only was practical, but spiritual, and a way of honoring the importance of whales to the livelihood of the culture. Whale bones also signify burials and so this entrance is also fitting for Pilgrim Hot Springs for that reason as well, honoring those who died of the 1918 influenza. The location of these perspectives can be found on the Master Plan (previous page) and will help orient the reader for the perspectives in the following pages.
Heading north from the whalebone entrance, the visitor will walk the dirt road towards the mission complex. They will pass beautiful vistas, the path to Unaataq Boardwalk, the campground and the cultural demonstration space but before getting to the mission complex, the natural beach will welcome the visitor first. Day users with children can stop here for the day and over-night guests get a sneak peak at the many soaking options available to them during their stay. Similar to the natural pool found at Chena Hot Springs, local granite rock strengthens the edges and this pool is made unique because it boasts a simple picnic area, playground and sand beach. All materials are able to be locally sourced, some even found on-site. An interpretive sign marks the remains of the former bathhouse.
THE MISSION COMPLEX FOCUS PLAN

- Geothermal facility
- Stables
- Windmill
- Classroom
- Lodge
- Courtyard (orchard and gardens)
- Artist cabin
- To the private cabins
- To the dog kennels
- Ag Field
- Ag Field
- Urrak Church
- Restaurant
- Natural pool and picnic area
- Recreation Center (former Nuns’ quarters)
- Greenhouses
- Hot Spring Bath Center
- 0 10 25 50 meters
View of the Mission Complex from Kargi Lodge. In this perspective you can see the renovated church now acting here as a restaurant. Food is important and should be cherished, worshiped and given thanks for; a fitting repurposing for a church. The geothermal greenhouses are located next door making food delivery to the restaurant quick and easy. Each salad ordered can be picked fresh or picked by the patron themselves! To the right of the church restaurant are the renovated Hot Spring Bath Center and the artist in residence program cabin. Children play in the courtyard, a couple strolls through the campus admiring the sculptures. A horse drawn carriage returns from the fields and an old-fashioned windmill draws water from the Pilgrim River to be used by the Mission Complex.
GREENHOUSES, ORCHARD & COURTYARD GARDEN

A closer look at the greenhouses and edible courtyard garden. Visitors can choose to either simply admire the agriculture or get their hands dirty and participate in the agritourism program.
Kargi Lodge, kargi meaning ‘community house’ in Inupiaq, is the former dorm site. It has a cultural sculpture garden entrance. The reconstructed Nun’s Quarters is converted into the recreation center where visitors can rent gear and learn about the many recreational opportunities offered a Pilgrim year round. It is also where educational tours of Pilgrim Hot Springs would begin. The geothermal facility, stables, and dog kennels are located just down the center road where the horse-drawn snow carrier is heading...
Here, a view of the private cabins shows how these buildings deal with flooding by being raised on stilts, representative of the stilt homes, called *tuviq* in Iñupiaq, of the Iñupiaq living on King Island, located just off of the Seward Peninsula coast, by Teller. Painted in bright colors to liven winter darkness, these colors represent the vibrant petals of summer wildflowers. At the nearby amphitheater (not pictured but noted on the interpretive sign), visitors can build a camp fire, winter or summer, and tell stories of their Pilgrim Hot Spring days, or gather to hear a talk from one of the cultural interpreters working at the resort. Composting outhouses and a private pool are shared by the six cabins.
Designed to blend into the surroundings and to reflect the elegance of geothermal engineering, the simple looking facility houses a unique geothermal system designed specifically for Pilgrim Hot Springs. Bringing electricity to the mission complex and private cabins as well as coordinating heat to those same buildings, an educational room also exists within so that educational tours of the facility can be organized.
As visitors leave the mission complex and head south to explore the rest of the site, their first stop will be Signatainniq Fields (signatainniq meaning ‘sharing Iñupiaq’ in Iñupiaq). In this perspective, the cultural demonstration space exhibits both winter and summer seasonal housing and the traditional sod-house of the Iñupiaq. Built anew each year (as is the case with the igloos and summer conical tents, but not so much for the sod-house) visitors can opt to spend the night in one of these structures.
This outdoor space is also meant to host Reindeer and Trade Fairs and can span both sides of the road in order to accommodate large crowds. This space is important to the whole design because it provides the richest interpretation and largest space for the Iñupiaq to share their culture not only with visitors but with their own community; this is where grandparents teach their grandchildren what it means to be Iñupiaq.
Here, every tub has a perfect view of the Kigluaik Mountains. *Unaataq*, meaning ‘hot spring’ in Iñupiaq, lofts four tubs that allow 2-4 people to soak and celebrate the springs in. They are connected by raised wooden boardwalks so that in spring and summer time, wildflowers will be preserved and one can feel as though they are floating among the flowers. These raised tub configurations are fitted with overhead structures from which to drape mosquito nets from in order to help protect soakers from Alaska’s ‘no-see-ums’. In winter, soft beacon lights show visitors the way to warmth and roof windows frame the colors of the northern lights overhead.
UNAATAQ BOARDWALK
In this perspective, guests are shown on tour of the wildlife viewing trails which are located to the south of the site. They are standing a safe distance from the yearling moose spotted munching on willow. A pair of tundra swan fly overhead and the juvenile gyrfalcon just a month shy of departing from its parents is experiencing a final lesson.
And finally, in this perspective which is located at the natural pool by the old bathhouse, a close-up of what interpretation and way-finding signs to be found throughout the property could look like. They are to ensure that education and knowledge of the site is shared and passed on to the visitor. Remember, education is the key to balancing recreation and conservation at Pilgrim Hot Springs’ Arctic Eco Resort.
Here is a closer look at a possible interpretation sign explaining the history of the Old Bath House located at the natural pool and picnic area. The post is made to look like whale bones but would most likely be made from wood and painted. The backboard made of wood where you can see the wood texture can be found on site from the abandoned buildings. The rest of the sign would most likely be made of painted metal and screwed in place. The base represents the Kigluaik Mountains that have formed the backdrop to Pilgrim Hot Springs since time immemorial. Also represented on the sign is the fireweed, *Epilobium angustifolium*, the beautiful magenta herb that grows with gusto throughout Pilgrim Hot Springs. This is because of the nature of the plant with its deep roots which allows it to escape damage and be one of the first species to grow where land has been disturbed. It is a survivor of ravaged landscapes and extends its abilities to people caught in survival situations able to provide food, drink, tinder, twine, and medicine. It is an appropriate icon for Pilgrim Hot Springs. For like the fireweed, Pilgrim Hot Springs has deep roots, rooted in history and Iñupiaq culture, and like fireweed, a great potential to rejuvenate itself in a neglected landscape.

Old Bath House

In 1942 the Catholic Church loaned the mission to the U.S Army for rest and relaxation of the troops stationed on the Peninsula.

This was the last time the bathhouse stood standing before the elements finally blew it down. This is all that remains...
PILGRIM HOT SPRINGS: A MASTER PLAN

Bringing together geothermal energy, history and Iñupiaq culture to create a sustainable and economically viable eco-tourism destination to the Seward Peninsula, Alaska.
LIMITATIONS OF STUDY

As mentioned in the story of the design process, Pilgrim Hot Springs has many layers of potential that stem from the layers of its history. It has been a very interesting project to work on because it involved researching arctic ecology, Iñupiaq culture, geothermal energy, and being a detective to uncover the site’s past. Because there are so many historic structures still existing on the site, it would have been useful to collaborate with an architecture student interested in historic preservation.

Originally hoping to be a community-based design project working with Unaataq, LLC, and working to incorporate the wishes of the board members, the geographical difference between Arizona and Alaska proved insurmountable even with the communication conveniences we have today. Because this project is so heavily focused on sustainability, and even though its design concept emphasizes education, having the support of the community and their involvement every step of the way, is really what makes a project sustainable.

FUTURE RESEARCH

Bearing in mind the study limitations, future research should involve community-based research. Following this Master’s Report, a summer internship working with Alaska Center for Energy and Power, may allow for this community-based research to actually occur. It has been a fortuitous arrangement getting to work with ACEP and utilize the research they’ve conducted out at Pilgrim Hot Springs over the past two summers. Additionally, because this project hopes to heavily utilize geothermal capabilities; further collaboration should occur between the landscape architect and the geothermal system design engineers. Designing a geothermal system is beyond the scope of a Landscape Architecture student. Again, this summer, this type of research may also occur.


Schofield, Janice J. (1989). Discovering Wild Plants; Alaska, Western Canada, the Northwest. New Zealand and Alaska: EATON


Blue Lagoon:

Chena Hot Springs:

Cree Village Ecolodge:

Hotel Kakslauttanen:

Liard Hot Springs:

Manley Hot Springs:

Stepping Stone Heritage Farm:

Tolovana Hot Springs:

World Wide opportunities on Organic Farms: