*Wind Ways* is a series of hollow, aluminum pipes that take advantage of incoming wind patterns and velocities to passively produce energy, sound, and light. The wide, top portion of each pipe is designed to capture winds from any direction. Utilizing the Venturi Effect, the process of speeding up winds by compressing the “tunnel” that is passes through, the wind is propelled downwards through the pipe’s interior where it passes through and spins a set of small fans. These mechanical fans will produce energy that can then be collected and distributed across the site as needed.

With the wind still needing a place to escape, perforations were made along the bottom portion of the pipes. These perforations would be cut and positioned in a way that will allow the released winds to create a specific music note for someone to hear. There are four “wind pipe” designs, each having a different height to help create and distinguish each music note it performs; meaning there are four notes that can be played. The pipes can then be organized along a pathway to recreate a specific song as people pass through it. In this case a Paiute “Game Song”, which the QR code in the presentation board will anonymously link you to, was chosen for three reasons. The first is that the Paiute people were native to this land and this would be a way to memorialize their nomadic habits, similar to the “come-and-go” nature of Burning Man. The second reason is because this song requires a few number of notes to be performed. The third, and probably most important reason, is that this particular “game song” is meant to be performed at varying speeds. The song would be played during any games the tribes would play. If said game was getting more intensive then the song would be played faster, and slower if the game were more relaxed. Because of this people passing through this series of wind pipes will hear the song recreated at a tempo that matches their current pace, and it may even influence their speed as well.

The spacing of each pipe was also very important. The Paiute Game Song has a repetitive nature to it, where it repeats itself every 12 seconds. These 12 seconds were mapped on a music sheet and then scaled onto the site. In one direction, the pipes are spaced in a way where every 3 meters a person travels, one note will be played. The entirety of a 12 second snippet could be heard across the span of 274 meters. In order to hear the song at its original tempo, a person would need to be travelling at about 19 kph which happens to be a comfortable speed that even novice bikers can achieve. But as stated prior, the tempo of the song will match the speed of the individual. In the other direction, the pipes are placed along a path in a fashion that represents the game song’s soundwave in plan view. This shape allows for a more varied and almost maze-like look when travelling through the design, where people could weave in and out of the path as they choose. These pipes can also emit light from within, allowing for interaction at nighttime as well.

*Wind Ways* could be a great way to occupy pathways along the Fly Ranch site, while also encouraging environmentally friendly travel methods such as walking and biking. The design could also allow for people to observe the surrounding land while hearing the Paiute game song being hummed from the site’s wind patterns. An individual may even feel connected to the Paiute tribe and their nomadic nature as they travel along the path.

In terms of system inputs, these pipes were designed to operate in an entirely passive way. The only real work required would be to install each pipe in their proper locations. One issue in maintenance that has been heavily considered is the potential build of sand in these hollow pipes. Ideas of meshes or filters being used to prevent coarse sands from entering the pipes were explored, but ultimately removed from the design to keep the project more concise. As for system outputs, it is difficult to say exactly how much energy could be produced from a single wind pipe considering its reliance on the varying wind patterns on the Fly Ranch site. What can be definitely said is that any energy produced can be gathered and distributed through an underground network of power lines, connecting each pipe together. This energy production can then be multiplied by however many wind pipes are erected.

When it comes to environmental impacts this design would require a good amount of aluminum (which isn’t the most environmentally friendly to collect) to achieve the number of wind pipes needed to recreate the Paiute game song. Because of this, research was put into the other types of materials that could be used in this scenario. When looking into the similar, yet much more complex, mechanics of an pipe organ, the options of using wood or brass can become viable substitutes. If this design were chosen for an honorarium grant, a prototype of each of the four different pipes would be created out of wood to test the sounds that could be performed. From there, small mechanical fans can then be fastened within the pipes to properly examine the amounts of energy that could be produced with the utilization of the Venturi Effect.