

# Solar Potential Map of Furman University created by LiDAR and GIS

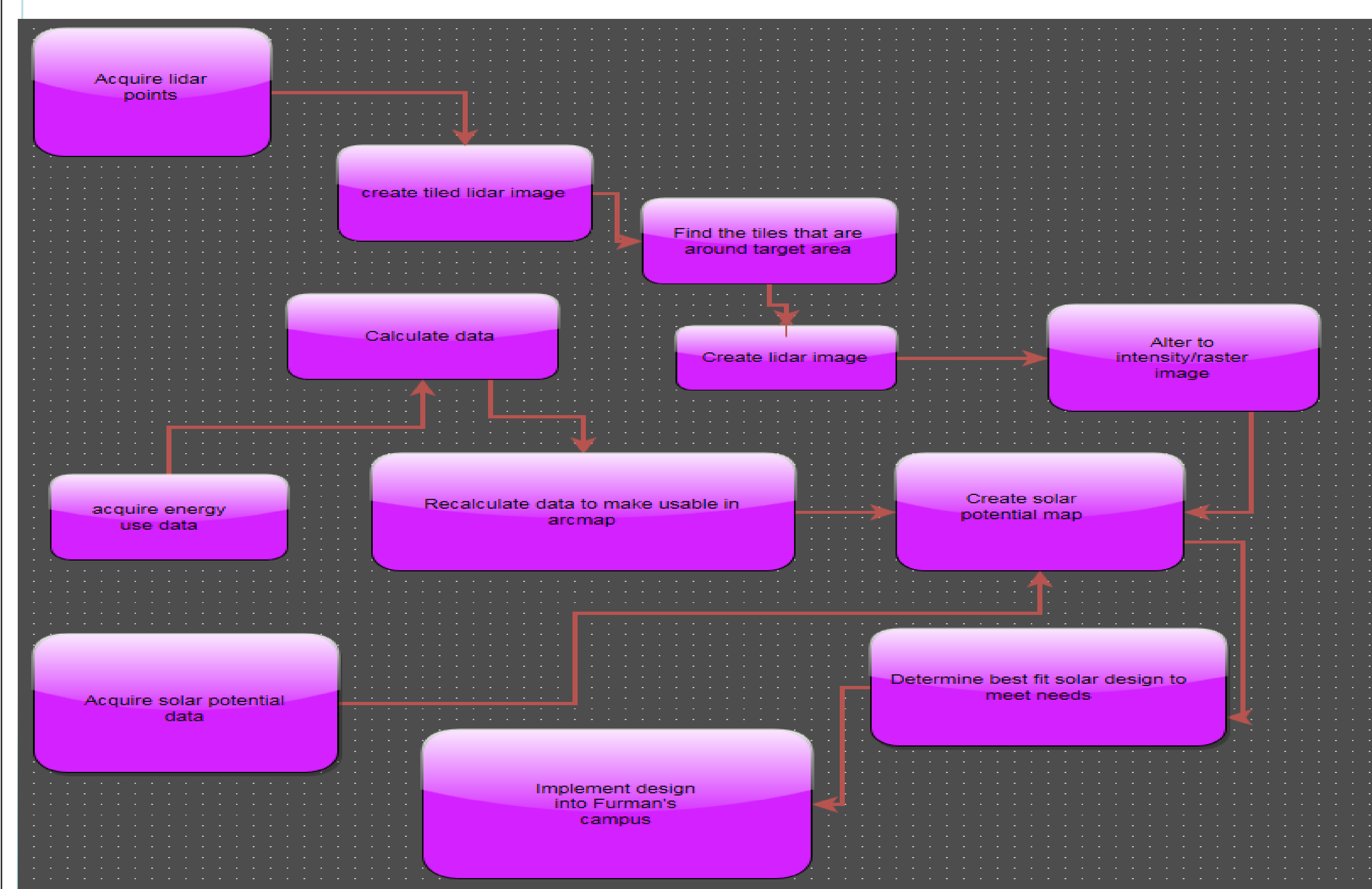
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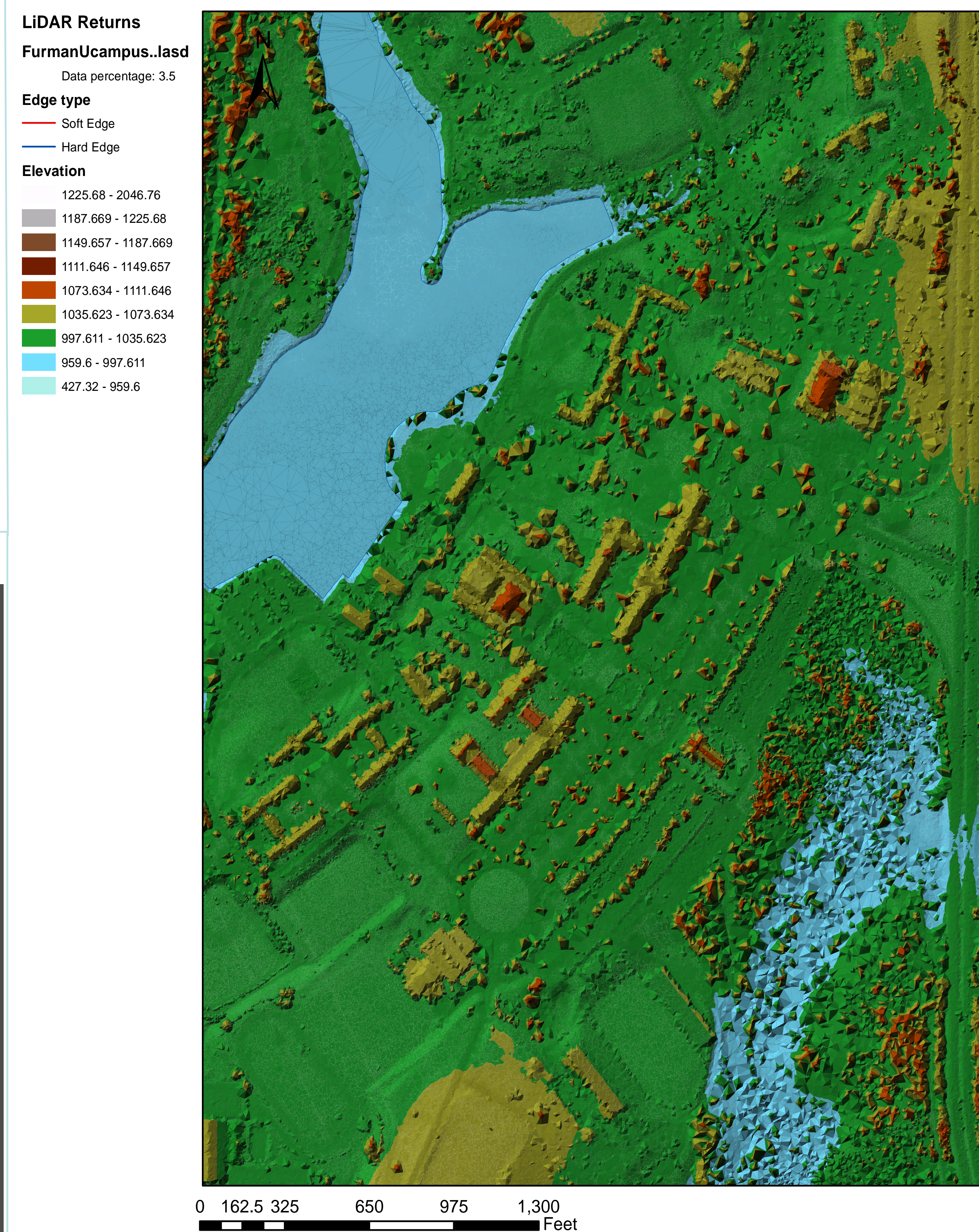
## Abstract

Furman University is one of the leading undergraduate liberal arts schools in the country. Furman is continuously trying to create a positive effect in the community. One of the ways it is continuously working to create the better environment is through being consciences about earth and the environment. I propose we look at this change coming from an energy point of view. Fossil Fuels are running low and are creating a multitude of bad side effects on the people and the planet. Fossil fuels as an energy source are becoming extinct and we need to invest in a new more renewable and less detrimental form of energy. The research presented here is dedicated to Solar Energy as that renewable source of energy. Solar power is one of the most abundant and cheapest sources of renewable energy. Solar technology is advancing rapidly, yet the cost to produce and sell is continuously dropping. Using remote sensing data, such as LiDAR (light detection and ranging) and GIS (geographic information systems) technology, this research will determine the best way to implement solar power.

## Methods



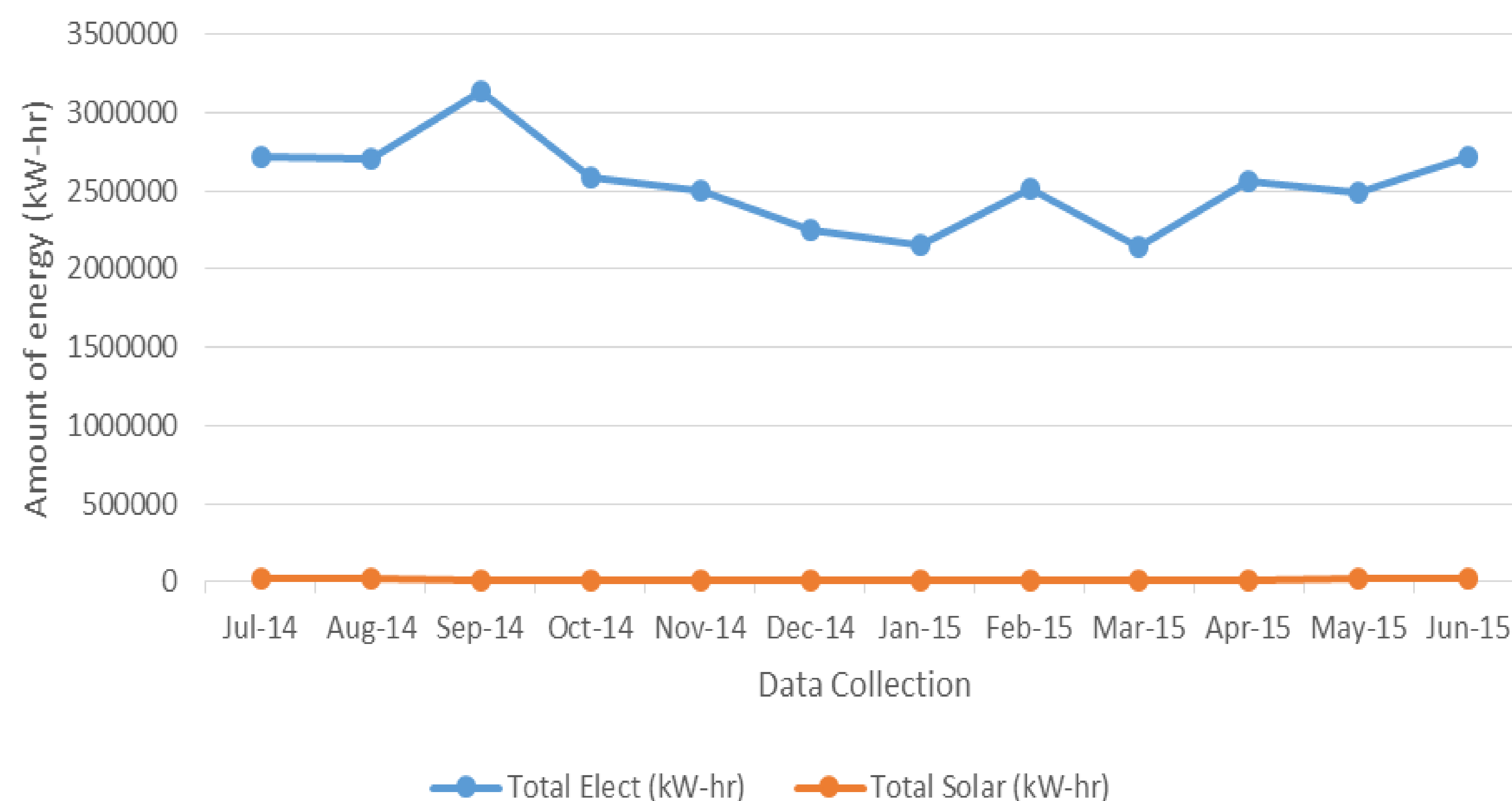
Single Return LiDAR image of Furman University



Raster and Intensity image of Furman University



Total electrical used vs Solar electrical produced at Furman University



Furman University Total Electrical VS Total PV Production

Timestamp	Total Solar (kW-hr)	Total Elect (kW-hr)	% solar
Jul-14	17824.1	2721726	152.6992
Aug-14	16908.5	2707125	160.1044
Sep-14	12286.6	3139505	255.5227
Oct-14	12761.3	2579370	202.1244
Nov-14	9830.5	2495986	253.9022
Dec-14	6914.1	2246048	324.8504
Jan-15	8803.1	2149305	244.1532
Feb-15	10022.8	2510471	250.476
Mar-15	12393.3	2140444	172.7098
Apr-15	13902.6	2555361	183.8045
May-15	19418	2492367	128.3534
Jun-15	17789.3	2711601	152.4288

## References and Data Sources

Provide a list of your references and data sources here.

## Ongoing work

Thus far I have used the LiDAR points and arc map to make a map of Furman's campus. For my ongoing work I will figure how to make the solar potential map. I will then go on to present this work to Furman and in Columbia at the GSA meeting. The main goal of this map is to create a solar potential map of Furman. This work however can also become the foundation for large projects such as mapping a whole city or state and creating these solar potential maps. Also I would like to use this work to propose a system that will help with generate renewable energy plans for planners ahead of time.