

Agriculture and Energy in the Anthropocene: Alternative Futures for Grinnell, Iowa

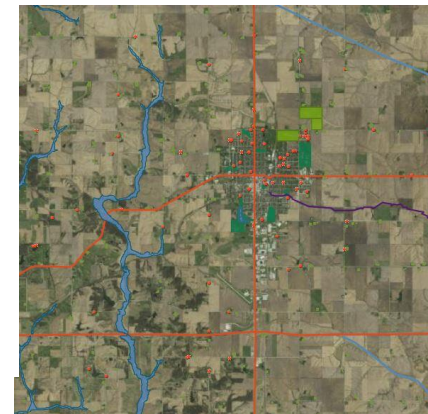
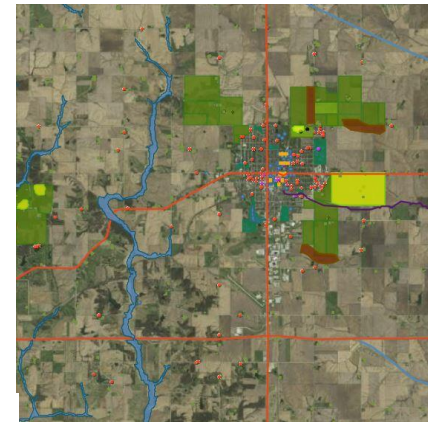
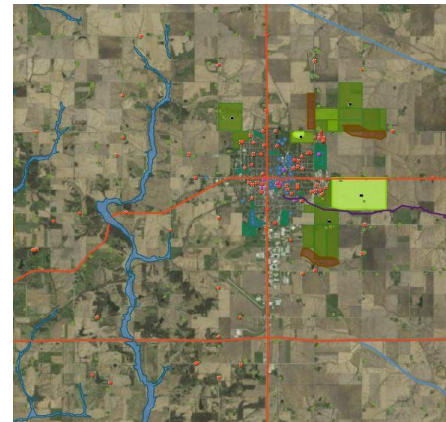
Situated at the top of three major watersheds: the Iowa, the Skunk, and the North English River.

- A small college town in Poweshiek County in Iowa
- It has a population of 9,218 as of 2010 census
- Grinnell College: progressive, sustainability programs

Five main Requirements | Grinnell by 2050

- Increase organic farming in the region by expanding the existing locations of organic farms.
- Improve life for low income communities.
- Improve soil quality in the areas of binary farming crops combining corn and soybean.
- Improve water quality.
- Attract young farmers to try alternative models of communities utilizing renewable sources of energy such as geothermal and solar.

Alenka Poplin and the team, Iowa State University | February 2019 | IGC meeting, Redlands, CA



Innovations

Agroforestry



Reduces cross-contamination from non-organic farms.

Algorithmic farming



Algorithmic growing software determine the layout of a mixed crop farm.

Plug-Flow digester



Digests manure from animals and produces electric power.

Solar roofs, roads and parking coverage



Utilizing solar energy in several different ways including solar roofs.

Geothermal power



Uses a pipe system called an earth loop and traditional HVAC systems to heat and cool.