



PROTECT OUR FOOD



Background

Location: Small Town Super Southern USA (150 feet below sea level)

Population: 2300 Male: 1500 Female: 800

Local Economy: based on productivity of peanut and soybean farming

Local Agriculture: based on small, family owned farms

Local Businesses: farmers market primary source of exchange of goods needed, gas station with some “necessities”

Surrounding Area: 45 miles north is larger city with franchised department stores, grocery stores, etc.

Current Situation

The peanut and soybean crops in Small Town Southern USA are being eaten by common wildlife, in particular deer and rabbits. The crops are not being eaten on the actual farms, but at the holding tanks they currently use. For one farmer last week, a total of 100 pounds of soybean had been eaten by this wildlife. At this rate, the farmer was concerned that there would not be an ample supply to ship for packaging, and thus directly impacting productivity and profits. The farmer spoke to other farmers in the area to find that their harvests were also being eaten by wildlife. One common feature in the farmers’ situations was that they were all using the same kind of holding container. These holding containers were made of a semi-permeable material that was quickly corroding and all of them had been positioned directly on the ground. The areas of corrosion, coupled with the proximity to the ground were allowing food to escape the tanks more easily and thus the wildlife could more easily gorge on their harvests. There was a *sense of urgency* among all of the farmers to determine a feasible solution to this growing problem. In their initial discussions, the following was established:

- There needs to be a new structure to store new harvests for all of the farmers.
- There needs to be a temporary structure to store harvests already in the corroding holding tanks.

Challenge Accepted! Designing, Modeling, and Testing:

- The large marshmallow represents the already harvested crops in Small Town Southern USA.
- The smaller marshmallows represent the yet-to-be harvested crops
- Both structures must be positioned above “sea level” (above the table).
- Materials are restricted to **only** those resources available in Small Town Southern USA:
 - 20 sticks of uncooked spaghetti

-1 meter of masking tape

-1 meter of string,

-1 large marshmallow,

-10 mini marshmallows

-Time is of the essence. Teams have 18 minutes to design, construct, and test models that can help this small town.