The Future of Residential Irrigation

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Project Objectives

- Investigate improvements in household irrigation
- Determine how to make lawn irrigation systems more efficient
- Focus on reducing household water wastes and costs
- Focus on brining agricultural irrigation technologies into residential homes
  - US Farmers irrigate at a rate of over 90% efficiency (Beebe, 2012) when homowners are left at around 75% (L.N. Scheer & Sons, 2012)

Through our research we found that there were many opportunities to bring efficient irrigation to residential homes.

Concluding question: What is the most environmentally friendly and efficient lawn irrigation system and how does it cut household waste water?

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Implementation and Incentives

- Work with our partners at Beebe's Landscape
- Collect data from the consumers
- With new data, we will pitch to larger landscape companies

Selling points:

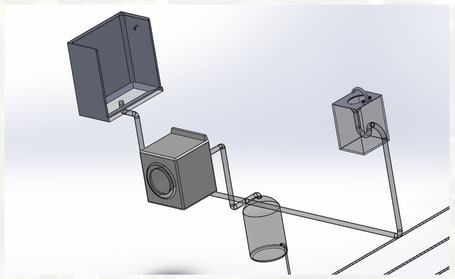
- Low Maintenance
- Cost Efficient - Pays for itself
- Reduces Waste
- Enviromentally Friendly
- Companies will receive discounts based on how many systems they sell

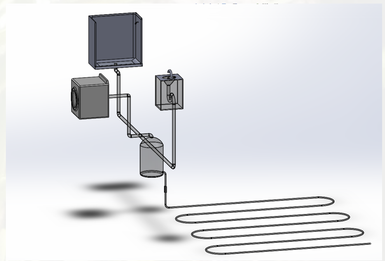
Project Overview

- Households use approximately 260 gallons of water daily (Environmental, 2012)
- 50%-80% is grey water ("Greywater", 2012)
- Nearly 130 gallons per family per day could be reused for irrigation
- Our systems reuses those 130 gallons a day and increases the efficiency of irrigation systems drastically
- Our system could save up to 50,000 gallons of water per household per year (L.N. Scheer & Sons, 2012)

Proposed Solutions

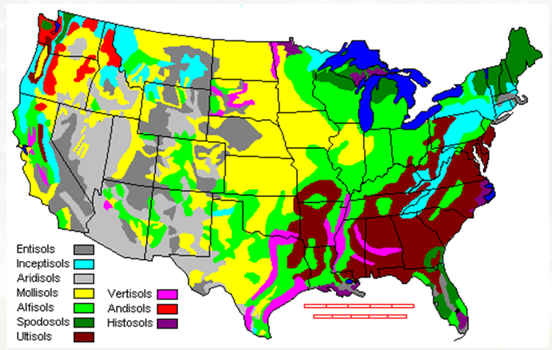
- The use of grey water systems will play a significant role in reducing irrigation water demands
- Our sollution to reducing irrigation water demand for homeowerns entails a subsurface drip irrigation system paired with a computer driven distribution system
- Homeowners currently overwater their lawns so they will look green, but this creating a need for more fungicides, fertilizers, and waste water, energy and money
- Water can be collected and stored from rooftop runoff





Determining Solutions

- Analyzing soil types and correlated impacts
- Developing a model that meets criteria of local climates
- Enhancing grey water filtration to determine its most efficient implementation
- Build a theoretical prototype to simulate water flow and effectiveness
- Find the most critical changes to irrigation to start saving water
- Consult with local governments and landscapers for support and knowledge of local area regulations
- Discover interests of consumers



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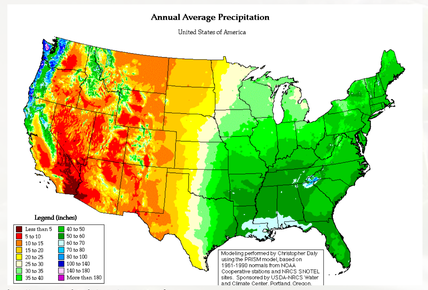

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