**Project Charter**

Transforming Drainage Project

Team 16

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**Problem Statement:**

There is a need to provide more secure water for crops throughout the growing season while maintaining adequate drainage during wet periods and limiting nutrient losses from drained agricultural landscapes. We will help build a web based solution by providing a visual representation of years of data, to plan out the construction of more efficient reservoirs. This planning can increase crop yield by 20%.

**Project Objectives:**

1. Develop a frontend system to visualize data necessary to minimize irrigation deficit and water diverted from the drainage system.
2. Accept input from both map or user specified file to produce accurate graphical models.
3. “Calculate the needed size of an irrigation reservoir that will store water during wet periods for use during dry periods.”(from the project description)
4. Design an intuitive interface to make the website easy to use.
5. Be made in a well known web technology such as Python that would be easily hosted and maintained by Purdue ITAP.

**Stakeholders:**

* Project Investigator: Jane Frankenberger
* GIS Specialist: Larry Theller
* Project Manager: Ben Reinhart
* Project Coordinator: Keehwan Park
* Developers: Clayton Marshall, Drew Atkinson, Jonah Heeren, Vritant Bhardwaj
* Users: The typical user for this tool would be farmers, drainage contractors and researchers.

**Deliverables:**

* Web interface that allows users to select desired location and input variables, possibly using the Leaflet Javascript mapping API.
* Capability to upload files as input.
* Implement the logic of the algorithm according to the Transforming Drainage Project’s specification
* Output two files with statistics and charts that display sustainable water supply under future climate conditions in a visually appealing way, possibly using Google Charts.