

# Hydro Citizens



## Citizens Science Mobile App for Hydrology Reporting

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**Client: Dr. Ruddell**

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# Our Client

- PhD, Civil Engineering, University of Illinois at Urbana-Champaign
- MS, Civil Engineering, University of Illinois at Urbana-Champaign
- BS, Engineering, Calvin College
- President of Ruddell Environmental consulting, the Director of the National Water-Economy Project (NWEF) and the Director of the FEWSion project



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# Why Hydro Data Collection is Important

- Flood Prevention
  - Caused by intensity and duration rainfall
  - Better warnings
  - Flood preparation
- Water Quality
  - Runoff
- Public Education/Knowledge





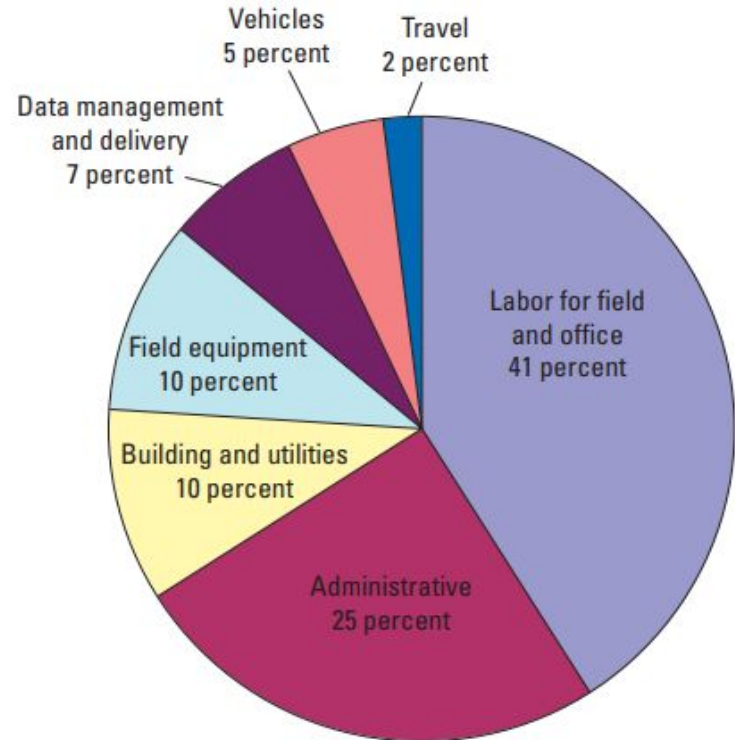
# USGS



- One of the agencies that collects a lot of the important hydrological data in the US is the United States Geological Survey
- The USGS installs stream gage sensors that monitor water level
- USGS uses this data to determine how much water will be available for the community to use
- Works with the National Weather Service to provide emergency flood data

# What's Wrong With the Current System?

- Sensors are large and expensive
- Gage height data is not being collected from:
  - Many smaller waterways
  - Waterways with only seasonal waterflow
- Budget cuts





# Our Solution



- Create a mobile app for users to use to take and upload images to our local database, this builds off of Dr. Ruddell's pre-existing website
- Image processing finds the water level
- User will upload the image and get instant feedback
- Send the water level data to our local database, then to our HydroServer then to the big HydroServer



# Technical Problems

- HydroServer
- Apache Database
- Image Processing
- iOS vs Android Development







# Conclusion

## Goals of the Project:

1. Flood Prediction/Preparation via data collected
2. Public Education
3. Save Money





# Sources

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