

Floodbusters

Project HydroCams



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Our Goal

- Flooding causes over **\$3.7B of damage** and claims over **120 lives** annually in the U.S.
- Flagstaff water flows could soon reach **3x - 16x** normal levels
- Nationwide frequency of flooding has doubled since 2000; **expected to more than triple** by 2050
- Many flood-detection systems are burdensome, expensive, and impractical
- A **new, cheap, and easy-to-deploy** system utilizing the modern IoT is needed



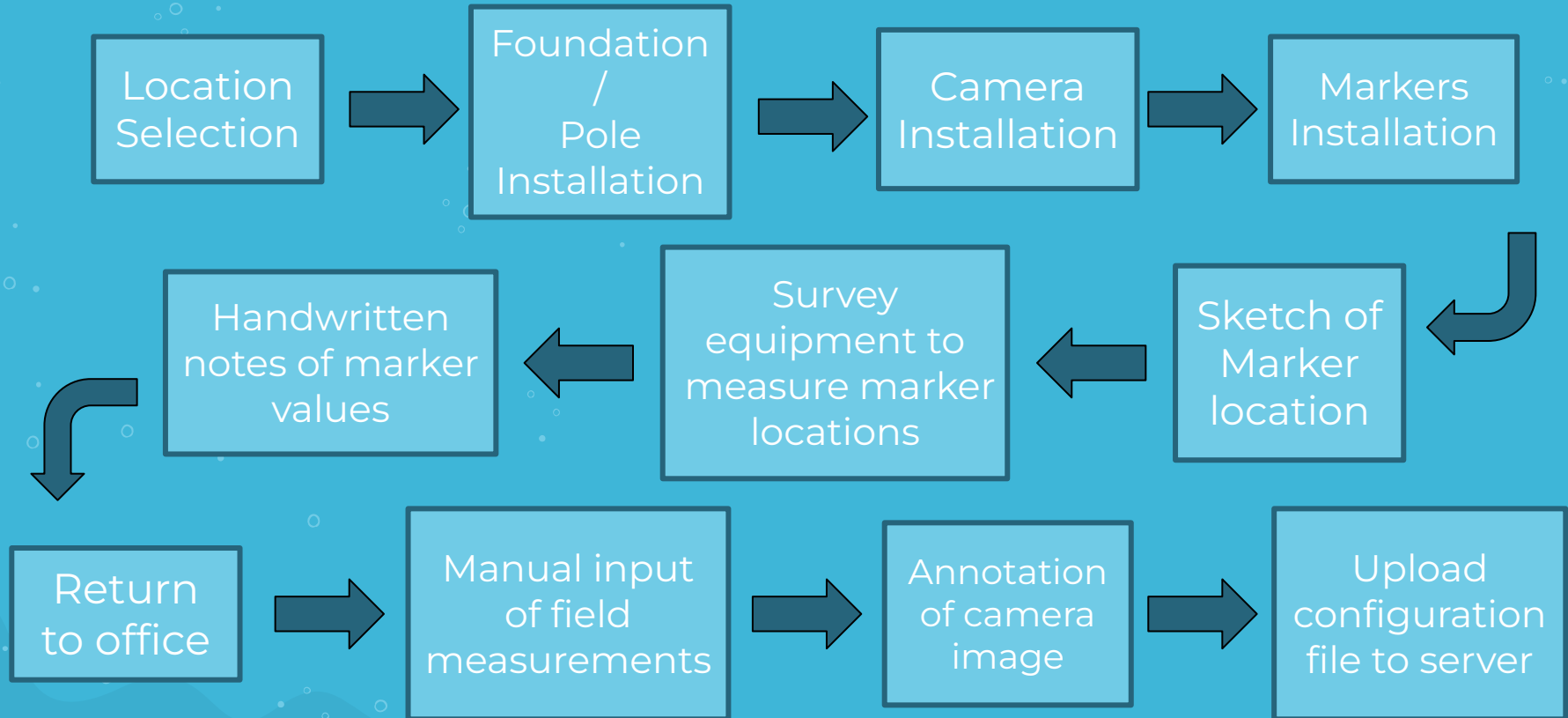
Our Client

- Professor of Computer Science and researcher - SICCS NAU
- A part of the FloodAware Project which led to the formulation of HydroCams
- Doerry's Goals for HydroCams:
 - Affordable
 - Solar Powered
 - Cell-Connected
 - Easy Installation



Dr. Eck Doerry

Current Process



The Problem

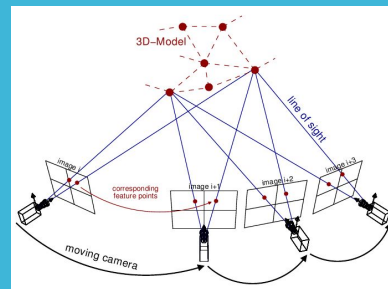
- There is no available and efficient monitoring system to mitigate damage and fatalities from flooding
 - Current systems are too expensive and labor intensive
- A system needs to be developed that can efficiently monitor urban flooding

Our Solution



The solution is split into a few parts:

- Automated CV software to perform image metrology.
- Use of SFM (Structure From Motion) to accurately calculate a 3D environment.
- Development of an Android and IOS app to add convenience.



Plan for Development

- Weekly Client Meetings
 - Discussing challenges and progress being made
 - Draft an agenda with current progress during meeting
- Technical Challenges
 - Designing the tool components
 - User interaction of creating/editing/deleting gauging points
 - Be able to detect gauging points in the image alone

Conclusion

- Create a basic image metrology program
- Automate using computer vision
- If metrology program is successful then app development
- Provide better flood control warnings to the area of Flagstaff