

## Remote Water Metering in Venecia, Nicaragua

In Conjunction with EWB-VT

Jeffrey Wettstein Advisor: Professor James Hedrick February 28<sup>th</sup>, 2015





#### **Presentation Overview**



- Project Motivation
- Water metering Why keep track?
- Lay of the Land Topography of Venecia
- Design Goals
- System Overview
- Implementation and Results
- Future Work



## **Project Motivation**











### Why Keep Track?



**Metering Data** 



**Lower Consumption** 





# **Lay Of The Land**







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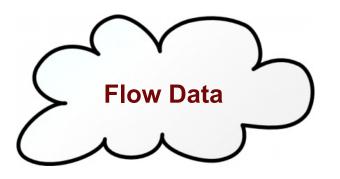






## **Design Goals**







Transmission Medium





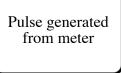






### **System Overview (Meter Side)**





Current water flow and totalized flow are calculated

Interface with packet modem

Packet is modulated into frequency of radio wave

Water flow from collection tank to EKM 2" water meter

Arduino Mega 2560

LinkSprite RS232 Shield Kantronics KPC-3 and FSK Modulating Radios







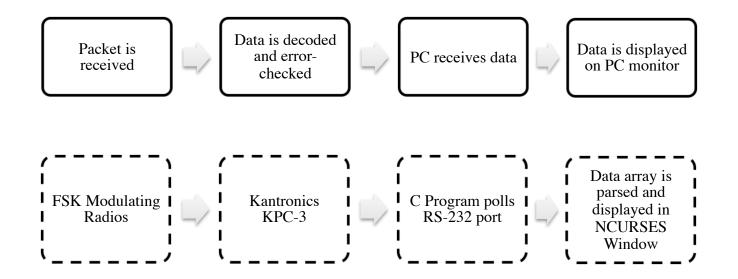






### **System Overview (Display Side)**

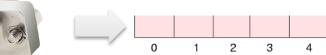














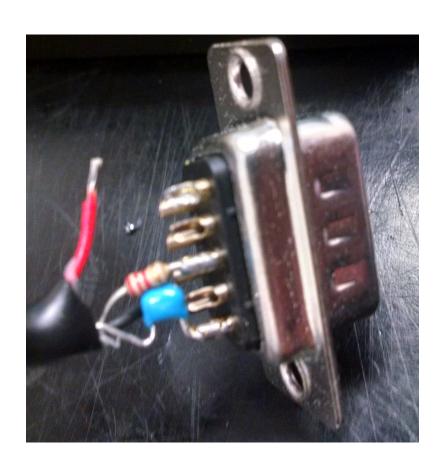
## **Implementation & Construction**







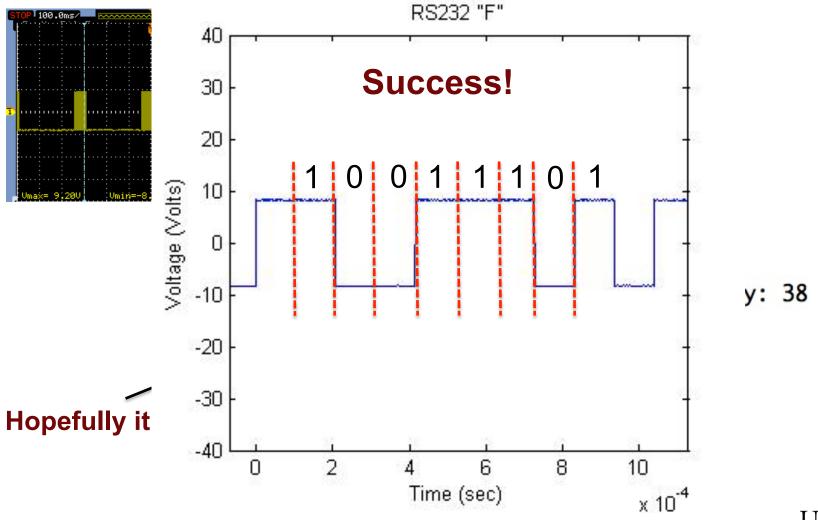






### **Initial Testing**







#### **Results**



```
hedrickj@rachel:/home/hedrickj/WaterFlow <2>
File Edit View Terminal Help
                         Welcome! Water metering data can be seen below:
                                                               Totalized Flow(Liters):
                            0.0
```



#### **Future Work**



- Weatherproofing meter-side components
- Sustainable meter-side power supply Solar??
- Commercial radios
- Data analysis features
  - Historical data management
  - Trending tools
- Installation!







