Mapping the City of Eatonton Water System and Creating a GIS Database for the Waterlines and Hydrants

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Georgia College’s ENGAGE Program

“ENGAGE supports the development of community based engaged learning (C-bEL) experiences for students in the classroom and beyond. Georgia college students address community issues and needs in partnership with community organizations”
How we got involved

• Initial meeting
  • Georgia College’s Biological and Environmental Sciences department
  • ENGAGE coordinator- Dr. Metzker
    • Put us in contact with the City of Eatonton officials and helped us obtain the necessary information and maps we needed to complete the project.
  • Faculty Mentor- Dr. Mutiti
    • Helped us design a plan for how we could help the City of Eatonton and helped us implement this plan by providing the necessary equipment and guidance throughout the project.
• Eatonton officials
How we got involved

• Initial meeting
  • Georgia College’s Biological and Environmental Science department
  • ENGAGE coordinators
  • Faculty advisor
  • Eatonton officials

• Main objective
  • Evaluate and locate areas where the city might be losing water through the distribution system
How we got involved

• Initial meeting
  • Georgia College’s Biological and Environmental Science department
  • ENGAGE coordinators
  • Faculty advisor
  • Eatonton officials
• Main objective
  • Conduct leak detection around the city to locate areas that could potentially be losing water
• First step
  • Create a complete map of the city’s water system including water lines, valves, and fire hydrants
The City of Eatonton

- The City of Eatonton is located in Putnam County, Georgia
- The current Mayor is Walter Rocker
- Mayor at the time of the project was John Reid
Procedures

Information acquired from:
• Eatonton City Administrator
  • Water distribution system (1997)
• Putnam Water and Sewer Authority
  • Water system improvements (2014)
• Eatonton Fire Department
  • List of fire hydrant locations (2015)

Also used:
• Google Maps and ArcMap
• Garmin Montana GPS unit
Procedures

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Procedure

• ArcMap 10.2.2
  • 1997 water lines
  • 2014 corrections to the water lines
  • All valves
  • All located fire hydrants
  • Roads
• ArcMap files were converted to .KMZ so they could easily be opened using Google Earth
Satellite image and roads (green)
Roads (green)
Roads (green)
1997 water lines (black)
1997 water lines (black)
Associated valves (green dots)
1997 water lines (black)
2014 corrections (blue)
All fire hydrants
1997 water lines (black)
2014 corrections (blue)
Fire hydrants (blue dots)
1997 water lines (black)
2014 corrections (blue)
Valves (green dots)
Fire hydrants (blue dots)
Suggested water lines (red)
Missing Hydrants

Hydrants not Found
Sherwood and 441
441 Bypass before Eagle One
Putnam Dr. at Custom Metals
Putnam Admin Building behind Load D
119 Glenwood Circle
Willie Bailey at dead end
121 Westminster Dr.
Office behind PGH
Highway 16 behind City Senior Center
125 Rainey Dr.
Flower Garden back of 325 Oak St
301 Carriage Way
Rosewood and Wagner at Trailer Park
Oak Street at Recreation Rd

Hydrants that were Inaccessible
Gro-Tech at back of building
441 at Lumber Transport
Final Product

• Presented to Mayor Reid, Georgia College Faculty, Denise Freeman (EPA), and community members at Georgia College
• Presented at the Putnam Water and Sewer Authority Board Meeting in Eatonton
• Provided Mayor Reid with a flash drive of the GIS database containing all files used to create the maps as well as the .KMZ files of each layer viewable on any device with Google Earth
Future Work

• We are currently in the process of being trained for leak detection so we will hopefully be able to look at specific portions of the pipes we mapped.

• The city believes it is losing water and this could potentially give them a general area of where this could be occurring.
Acknowledgements

- Mayor Reid
- Dr. Metzker
- Dr. Sam Mutiti
- Mr. Gary Sanders
- Ms. Donna Van Haute
- Eatonton Fire Department
- Georgia College and State University
Questions?

Grad students mapped water lines over summer

By Jeff Warren
Staff

In the struggle to make sense of Eaton county’s freshwater system and supply firefighting water to all hydrants in the city, one major hurdle was overcome last summer. Two graduate students, Megan Corley and Jenna Forte, both pursuing a master’s degree in biology at Georgia College & State University, mapped Eaton County’s water mains. Their work is momentous because prior to the map they compiled, the only system maps available to the Eaton County Water & Sewer Authority left out many mains.

“The pipes and everything were there, but no maps,” explained Dr. Samuel Mutti. Corley and Forte’s professor and their supervisor on the mapping project. The project started...