

CUPSS and Us

Getting Started in Asset Management Using



Prevent this!



Guatemala Sewer Pipe Explosion, February 2007

Credit: Associated Press

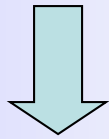
And this!



Leaking reservoir

Credit: Rural Community Assistance Corporation

Bad Problem – Not having a backup plan



Good Solution – Asset management



What is Asset Management?

“A process for maintaining a desired level of customer service at the best appropriate cost.”



How Will it Help?

- ✿ Asset management has many benefits
 - “Make investment decisions – large and small – based on understanding of life cycle costs and benefits.”
 - “Set Service Levels and make investments needed to meet them – now and into the future.”
 - “Reduce asset risk through capital investments, or changed maintenance practices and response protocols.”

In Other Words...



Booster station with above ground piping

Credit: Rural Community Assistance Corporation

- Back up budget talks with solid facts
- Boost utility efficiency
- Save staff time
- Understand that a utility is running a customer service business
- Keep customers happy



Check Up Program for Small Systems

[Set-up](#) | [Switch Utility](#) | [Create User](#) | [Help](#) | [Training](#) | [Exit](#)

My Home
 My Inventory
 My O & M
 My Finances
 My Check Up
 My CUPSS Plan

Beauty View Acres Subdivision - DW Operation and Maintenance

[Add A Task](#) | [Print Blank Worksheet](#) | [Search/Print](#)
[Print Worksheets By Date Range](#)

The O&M section allows you to filter tasks by a utility.

Filter Utility Beauty View Acres Subdivision - DW Month April Year 2012 Show Completed Tasks

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	2 Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che...	3 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	4 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	5 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	6 Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che...	7 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...
8 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	9 Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che... Past Due: Che...	10 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	11 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	12 Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch... Past Due: Ch...	13 Check and re... Check and re... Check instru... Check water ... Complete a d...	14 Check and re... Check and re... Check instru... Check water ... Complete a d...
15 Check and re... Check and re... Check instru... Check water ... Complete a d...	16 Check and re... Check and re... Check instru... Check water ... Clean pump ...	17 Check and re... Check and re... Check instru... Check water ... Complete a d...	18 Check and re... Check and re... Check instru... Check water ... Complete a d...	19 Check and re... Check and re... Check instru... Check water ... Complete a d...	20 Check and re... Check and re... Check instru... Check water ... Complete a d...	21 Check and re... Check and re... Check instru... Check water ... Complete a d...
22 Check and re... Check and re... Check instru... Check water ... Complete a d...	23 Check and re... Check and re... Check instru... Check water ... Clean pump ...	24 Check and re... Check and re... Check instru... Check water ... Complete a d...	25 Check and re... Check and re... Check instru... Check water ... Complete a d...	26 Check and re... Check and re... Check instru... Check water ... Complete a d...	27 Check and re... Check and re... Check instru... Check water ... Complete a d...	28 Check and re... Check and re... Check instru... Check water ... Complete a d...
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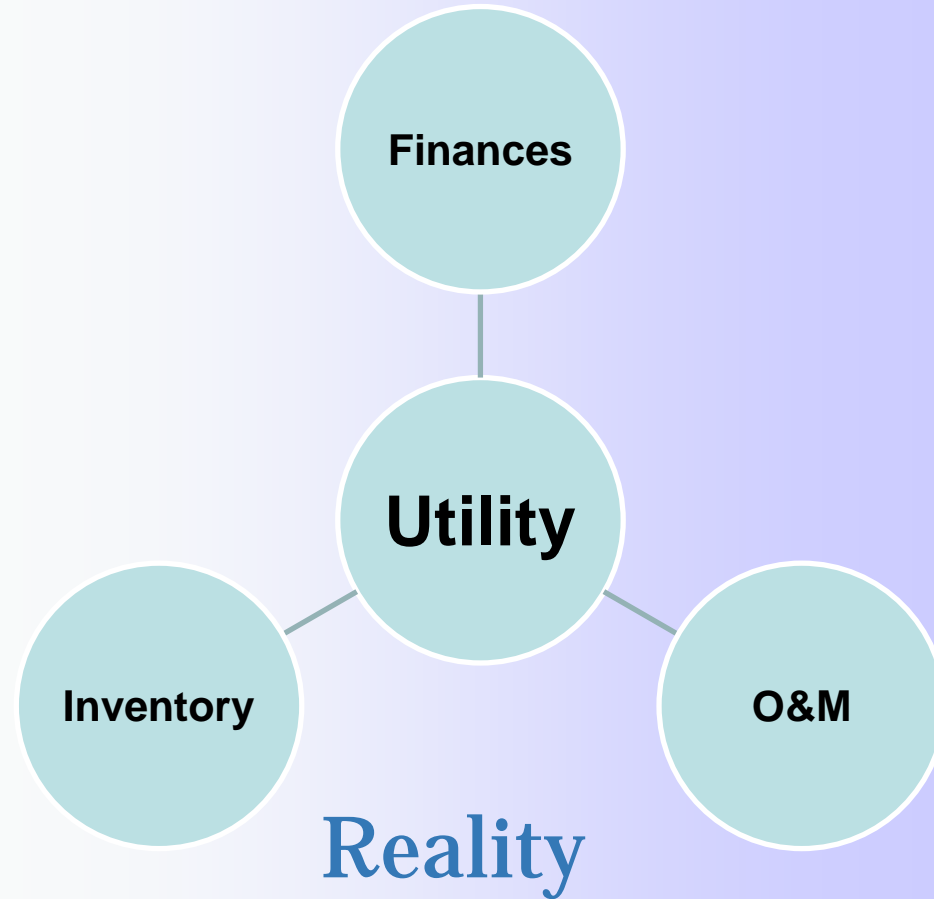
Other features

- Searchable list of assets in an easy to organize feature (similar to excel pivot table)
- Financial calculator to help manage budget and future costs, as well as unforeseen expenses (i.e. damage from weather event)
- Import/export via excel to merge and manage multiple asset inventories, or to share with others

Worried that AM is a maze?



Your Fear



Check Up Program for Small Systems

- Free, easy-to-use software
- Asset Management 101 for water/wastewater systems
- Prepare an asset management plan in 7 steps



*Credit: City of North Bend, Washington
WWTP; Sewer Division*

Why Manage Assets?

Remember Aging Infrastructure



NYC pipe explosion, July 2007

Credit: Mario Tama, Getty Images



NYC pipe explosion, July 2007

Credit: Robert Stolank, New York Times

Why Manage Assets?

Remember the Condition of Assets



Poorly maintained reservoir

Credit: Rural Community Assistance Corporation



Rusted iron water pipe

Credit: Timothy Ford, Montana State University

Why Manage Assets?

Remember Importance of Redundancy



MN bridge collapse, August 2007

Credit: Jim Gehrz, Associated Press

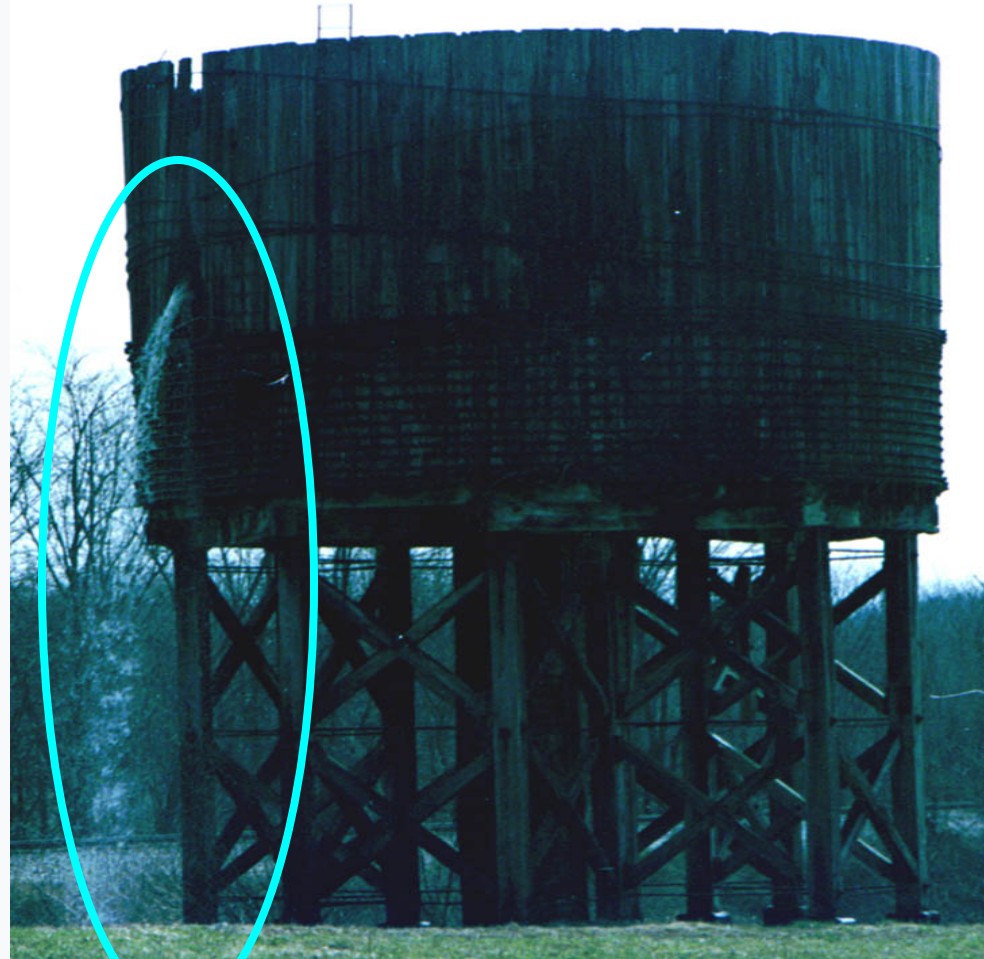
Why Manage Assets?

Remember the Community



Leaking valve

Credit: Rural Community Assistance Corporation



Ruptured Wooden Water Tower, March 1999

Credit: Charles Myers, Rolla, MO

Why Manage Assets?

Remember Surrounding Watersheds

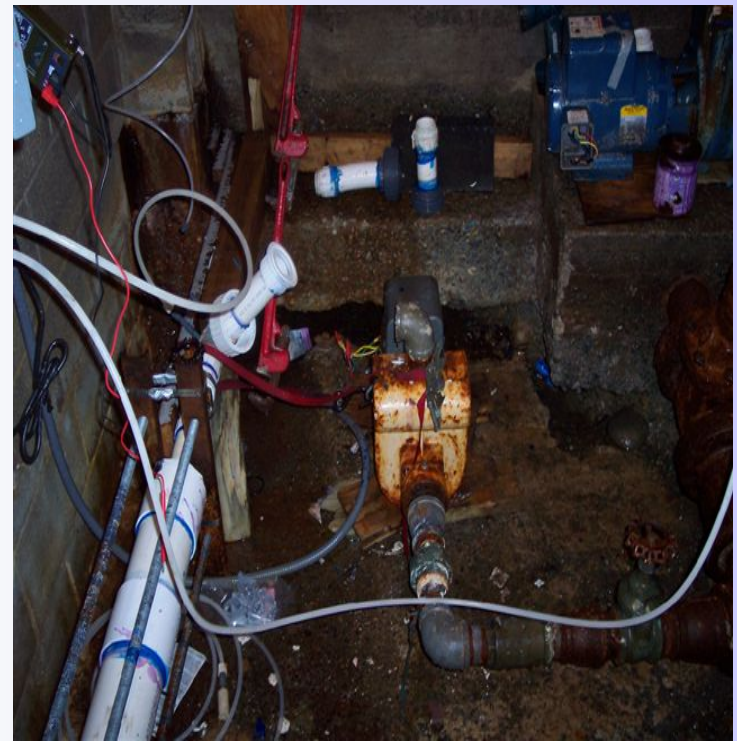


Fuel tank leaking diesel next to wellhead

Credit: Rural Community Assistance Corporation

Asking the Right Questions

- What is the current state of the assets?
- What is the desired “sustainable” level of service?
- What assets are critical to sustained performance?
- What are the best minimum life-cycle-costs and O&M strategies?
- What is the long-term financing strategy?



Failed booster pump results in well house flooding

Credit: Rural Community Assistance Corporation

Identifying Areas of Improvement



Leaking reservoir wall

Credit: Rural Community Assistance Corporation



Spring Box with open access

Credit: Rural Community Assistance Corporation



Wellhead that needs to be replaced

Credit: Rural Community Assistance Corporation

Lessons Learned

Tracking Fire Hydrants



*Fire at DC's historic Eastern Market
Credit: Arthur Delaney, Washington City
Paper*



*An out of service fire hydrant in DC
Credit: Dave Statter, WUSA9 News*

Lessons Learned

Hurricane Katrina Response



Flooding in Louisiana caused by Hurricane Katrina, August 2005

Credit: Wikimedia Commons



Fallen water tower in Biloxi, Mississippi caused by Hurricane Katrina, August 2005

Credit: Andrew Richards

Communities Using Asset Management

- ✿ Elkhart County, Indiana
 - Unaccounted for water exceeded 40%.
 - Meters were the problem – adding the proper meter in the proper location showed that they didn't have water loss at all.
 - “By incorporating an asset management program the system was able to locate the problem and correct the problem. By incorporating [maintenance] costs into the annual budget, the utility recoups the most value out of its assets and has the financial resources to rehabilitate and replace assets as needed.”

How can CUPSS Help?

- **Communicate** effectively with decision makers!
- **Decisions** will be predictive, not reactive!
- **Ensure** funds are spent in the most appropriate manner!

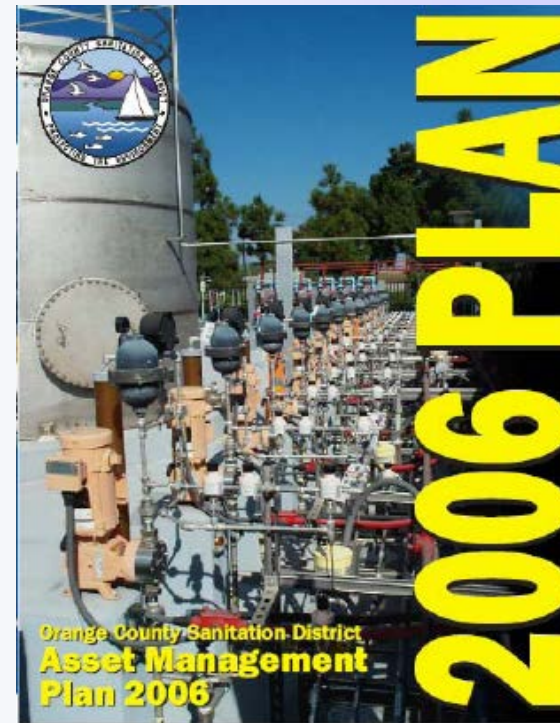


Small system wellhead with hydrotank

Credit: Rural Community Assistance Corporation

What Will CUPSS Do?

- Track:
 - Inventory
 - Tasks
 - Finances
- Develop a personalized Asset Management Plan!






My Home



My Inventory



My O & M



My Finances



My Check Up



My CUPSS Plan

Welcome Back Example, Beauty View Acres Subdivision - DW

What would you like to do today?



[Do Some Training](#)



[Enter a New Task or Work Order](#)



[Create or Update My Schematic](#)



[Search Asset and Maintenance](#)



[Create or Update My Inventory](#)



[Enter My Finances](#)



[Print My Check Up Reports](#)



[Work on My CUPSS Plan](#)

Version 1.3.7 December 22, 2011

My Calendar

April 2012

Sun	Mon	Tue	Wed	Thu	Fri	Sat
25	26	27	28	29	30	31
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

My Messages and Alerts

Popup Messages Are On. [Click To Turn Off.](#)

Reminder - Today's Tasks	8
Tasks Currently Past Due	12908
Assets Needing Update	0
Number of High Risk Assets	4

How Is CUPSS Easy to Use?

- CUPSS is tailored for small systems:
 - Simple interface
 - Less jargon
 - Baby-step approach
 - Features enable easy data entry



Small drinking water treatment plant

Credit: Village of Forsyth, IL

How Will We Get Started?

- Organize records
- Form a team
- Reach out to others
- Identify level of service goals



Small wastewater treatment plant

Credit: Rural Community Assistance Corporation

Support For Users

CUPSS

Supporting Materials

- CUPSS User's Guide
- CUPSS Workbook
- Tutorials/training
- User E-mail List
- CUPSS Web site
(www.epa.gov/cupss)

Asset Management Supporting Materials

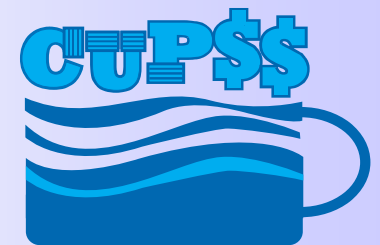
- STEP Guides
- Best Practices Guides
- Web cast training
- AM Web site



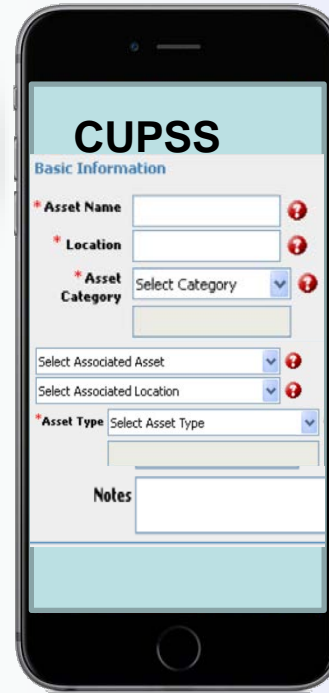
**Trainer
Network**

Who is CUPSS For?

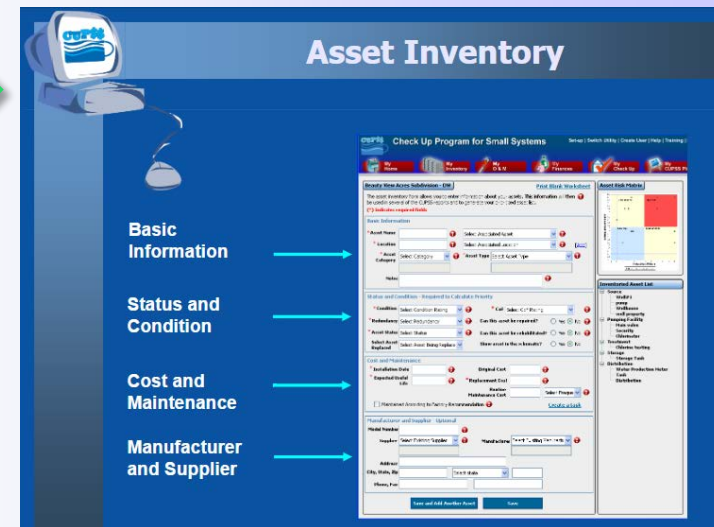
- CUPSS is for small drinking water and wastewater utilities that want to:
 - Apply proactive decision making
 - Prevent surprises or worse
 - Establish, reach or maintain Level of Service goals
 - Comply with financial reporting procedures (GASB 34 or FASB) for a good credit rating
 - Implement long range planning



CUPSS App



- Simplified *data entry* system
- Allows for use of smart phone to enter data, collect GPS location, and take photos of assets.
- Data can be downloaded to PC and then imported into CUPSS



Contact

[Your CUPSS Contact]

[Phone Number]

[Email Address]

For more information:

www.epa.gov/cupss

cupss@epa.gov

CUPSS Mobile APP

- Developed by



- Utilizes cell phones and tablets to streamline asset management
- User Friendly
- Practical for 2017

The Concept

Asset List

- Asset #1
- Asset #2
- Asset #3
- Asset #4
- Asset #5
- Asset #6
- Asset #7
- Asset #8
- Asset #9
- Asset #10
- Asset #11
- Asset #12
- Asset #13
- Asset #14
- Asset #15
- Asset #16
- Asset #17
- Asset #18
- Asset #19
- Asset #20



CUPSS MOBILE

Basic Information

* Asset Name ?

* Location ?

* Asset Category ?

Select Associated Asset ?

Select Associated Location ?

* Asset Type

Notes

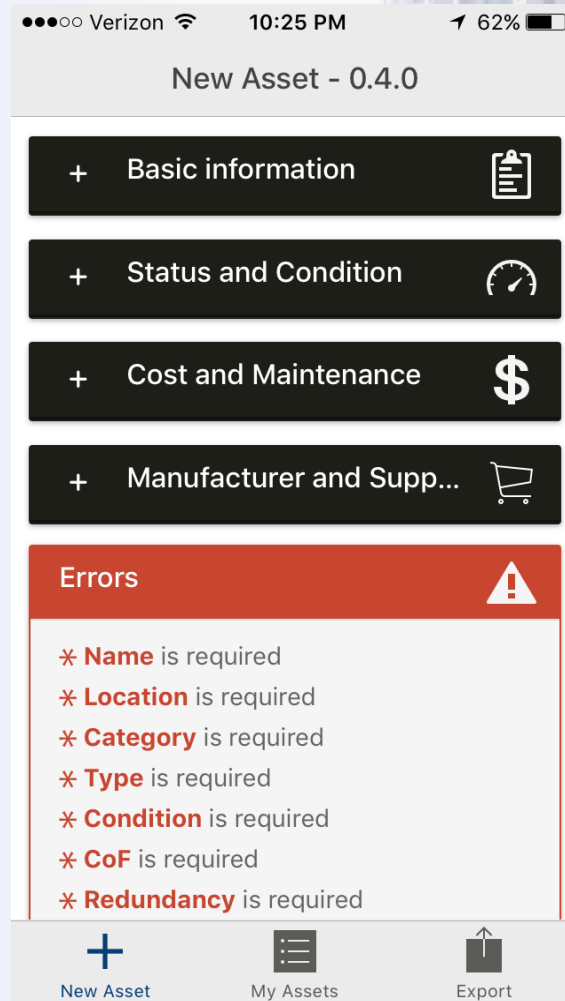


Asset

- Basic Information
- Status and Condition
- Cost and Maintenance
- Manufacturer and Supplier

See pg 81 of cupss_training_session

The Finished Product (Version 4.0)



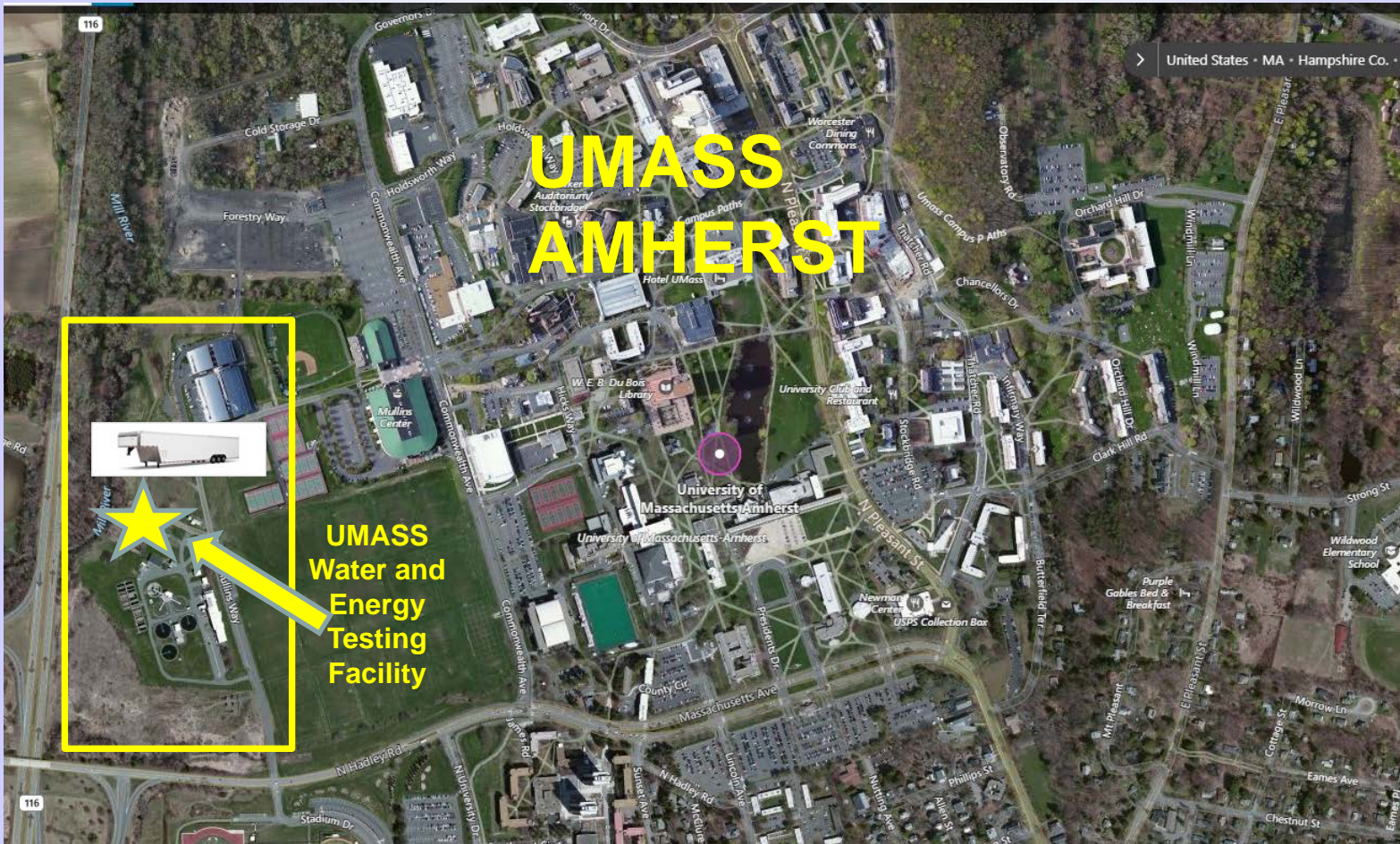


UMass Case Study Spring, 2017

Independent Study

Performed by undergraduates:

Robert Acer, Brendan Pickett, Claudia Baptista, & Holly Lancey



UMASS AMHERST

**UMASS
Water and
Energy
Testing
Facility**





MILL RIVER

**UMass
Central
Heating
Plant**

**UMass
Water and
Energy
Testing
Facility
(WET)**

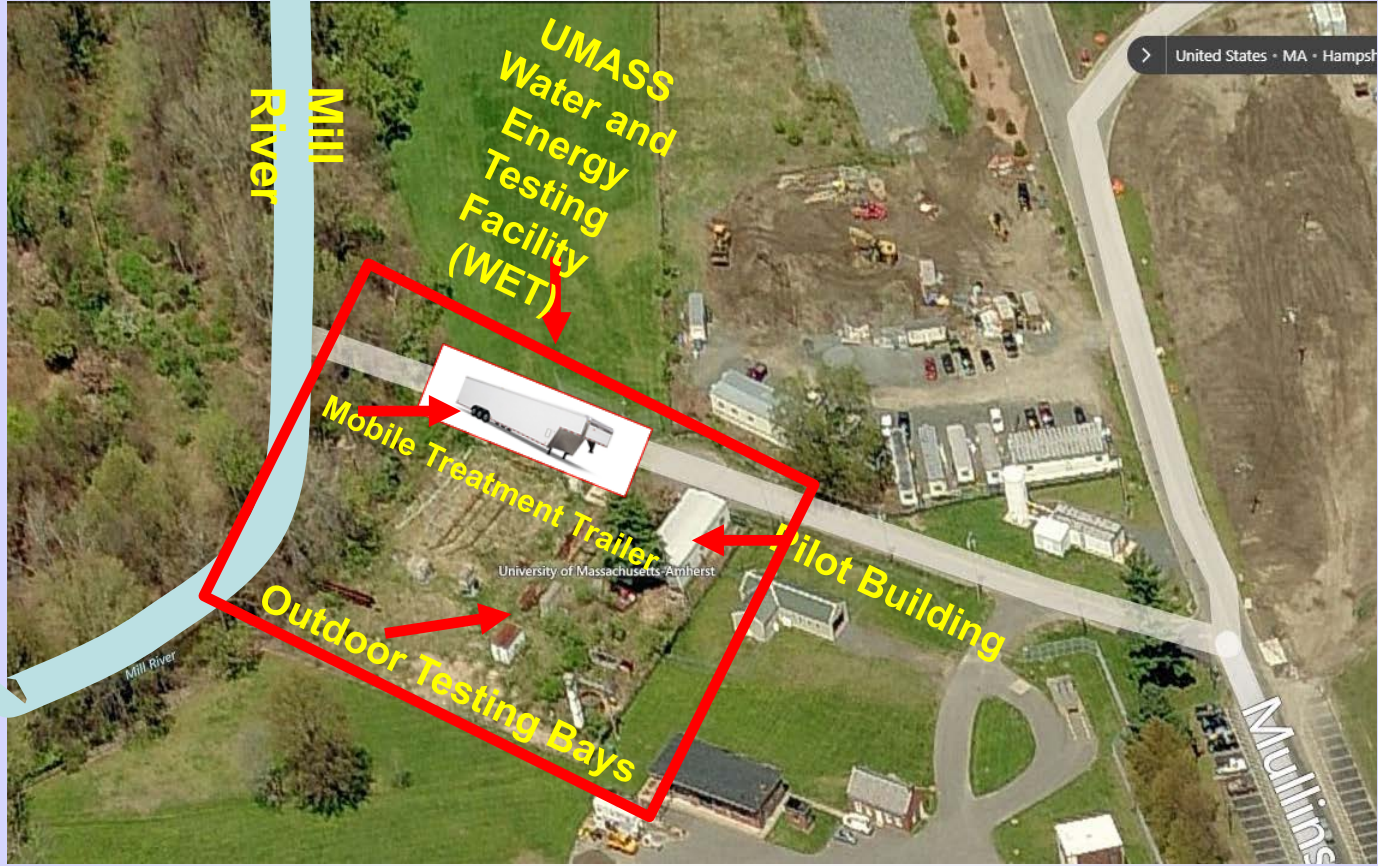
**Town of
Amherst
Waste Water
Treatment
Plant**

Mullins Cafe
Mullins Center

Commonwealth Ave

Mullins Way

6





1976



2015



2017



2012



2015



2017



1976



2015



2017



Location	Asset Name
TOA	Gate Valve 1
	Gate Valve 2
	Wastewater Supply Line 1
	Wastewater Supply Line 2
	Wastewater Supply Line 3
Pump House	Pump Manifold 1
	Pump Manifold 2
	Pump Manifold 3
	Drain
	Supply Pump 1
	Supply Pump 2
	Supply Pump 3
	Supply Pump 4
	Distribution Hose 1
	Distribution Hose 2
	Distribution Hose 3
	Distribution Hose 4
	True Union Check Valve
	Distribution Pipes
Pilot Building	Heated Hose
	Pipe Manifold
	True Union Check Valve 2
	Sump Pump
	Waste Holding Tank
	Cast Iron Drain Line
Sewer Station	True Union Check Valve 3
	Final Discharge Line
	Sewer Station Manifold

Table 1- List of Assets

Results and Improvements

- Three versions of the app tested and improved upon
- Improved user friendliness
 - Streamlined navigation, sensible features added (i.e. copy and paste of assets, home button on each screen)
- Numerous bugs identified and worked out
- Help feature added, this provides instructions for each entry field
- Aesthetics improved greatly
- Ability to add pictures (not available on CUPSS desktop app)