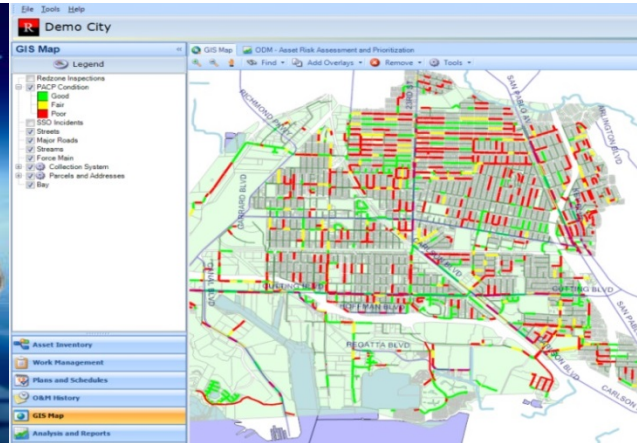


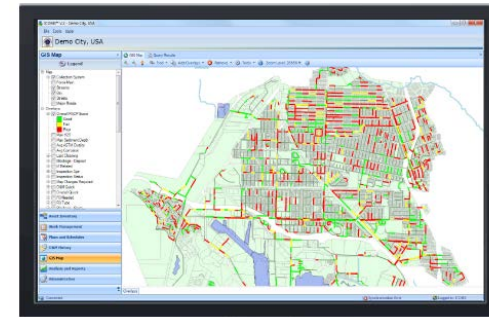
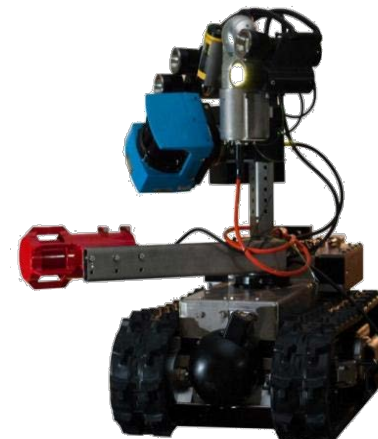


COMPREHENSIVE WASTEWATER ASSET MANAGEMENT SOLUTIONS

Ken Wolf
Executive Vice President



- Well-recognized wastewater technology company founded in 1987; focused exclusively on wastewater since 2004
- Strong legacy background in alternative markets:
 - Mining
 - Oil & Gas
 - Nuclear Energy
- Headquarters in Pittsburgh, PA with office in CA & NZ
- ~75 employees
- Recognized innovators



Rimersburg, PA had state DEP consent order removed and \$3M required construction cancelled

BETTER INDUSTRIES
MUNICIPAL SEWER WATER

ON THEIR OWN

A robotic pipe inspection system enables a western Pennsylvania municipal authority to complete an assessment and avoid a consent order and fine.

By Scott Dugan

In 2008, after a year of negotiations, a wastewater treatment plant in Rimersburg, Pa., was finally able to get a consent order removed from the state Department of Environmental Protection. Even though the authority had reduced its 35 percent and flow monitor showed that the facility was meeting the load, the DEP insisted that the sewer collection system be replaced.

The authority agreed that would be expensive and even worse, that officials objected to what the replacement would cost to 200 customers. "Considering an \$8 million facility would be worse than a fine for a moment that could," said Roger Cook, authority director.

Cook determined to take more control of the process and began

researched behind engineering consultant, Ken Orr, PE, project engineer for Green Thomas Engineering Co. Inc., in Latrobe, Pa. Cook suggested reviewing all 250,000 feet of the collection system to give the authority's willingness to manage its assets. It was only three weeks before the final negotiation meeting with the DEP.

One microcontroller using a hole-making pipe inspection system from RedZone Robotics in the time frame began searching the main, and the inspection was completed. The results enabled the authority to avoid a consent order and fine.

For years, budget constraints had limited the authority's ability to maintain its assets and develop a rehabilitation program. With CleanWaterVision Engineering, that situation has been reversed. The authority is now able to avoid a consent order and fine through lateral replacement

and other alternative measures that are still lacking enough system knowledge to understand its effects on plant performance," said Cook. The inspection plan, including 200 manholes, was completed in 2008. Most assets are 8 to 15 inch lines and diameters between 200 manholes offers several 500 feet. "The first day a 100-foot crew can get well consistent inspection coverage is 1,000 feet per day, and our data is 20 'lines' per day. With this information you can operate from a computer, reduce manhole access, increasing throughput to the line."

Ron Canada, regional sales vice president for RedZone, said: "Our single public works forecast from 100 manholes and the system how to operate the system. It includes fully automatic robot control, camera platform, image capture, data storage, navigation, comprehensive condition reports, and access to interactive online asset management tools. Canada also provided training and

customer service according to NASSCO Pipeline Assessment and Certification Program (PACP) standards.

BETTER INDUSTRIES

PRODUCT: RedZone inspection system

MANUFACTURER: RedZone Robotics

APPLICATION: Sewer pipe inspection

BENEFITS: Increased inspection productivity

USER: Rimersburg Borough Municipal Authority

WEB SITE: www.redzone.com



A safe inspection unit from RedZone Robotics was part of a system inspection for the Rimersburg Borough (Pa.) Municipal Authority.

The package The forward all camera from a 100-foot field of view with LED light source around the lines. The package was issued a thorough

OUR MISSION

The worldwide wastewater industry is plagued by a massive **information deficit**.

Funds are scarce and vital decisions are being made with incomplete information.

RedZone helps people, cities and the environment by giving wastewater managers the information and tools they need to make fact based decisions on how to spend limited funds

The status quo is unsustainable...



Common regulatory 'starting point' questions:

Core Questions of Asset Management:

- What do I own?
- Where is it?
- What is the probability of failure?
- What is the consequence of failure?
- Should we repair, refurbish or replace the pipe?
- What are the costs to replace?
- What are the social costs of failure?
- What are my operations and maintenance priorities for next year?
- What capital budgets should I allocate for the next 1, 5, and 20 years?



- *Asset Management: A Best Practices Guide EPA*

OUR PLATFORM

**Data Acquisition Tools
Robots & Sensors**
“Getting information you need”

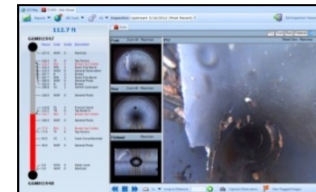


**Asset Management
& Planning Software**
“Making data useful”



ICOM3

- Specialized linear asset repository.
- Observation coding
- Industry Standard (PACP)
- EAM Integration
- Dynamic planning R3,
- Maintenance planning
- PTZ & Standard video viewing
- Work planning options



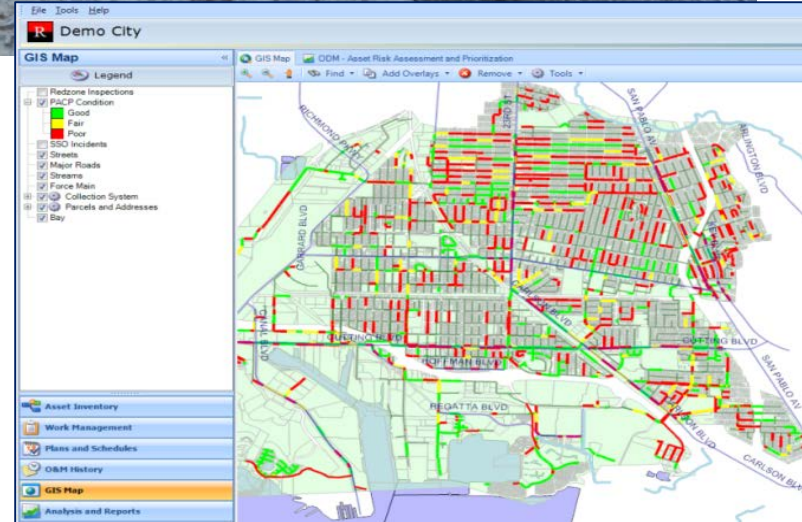
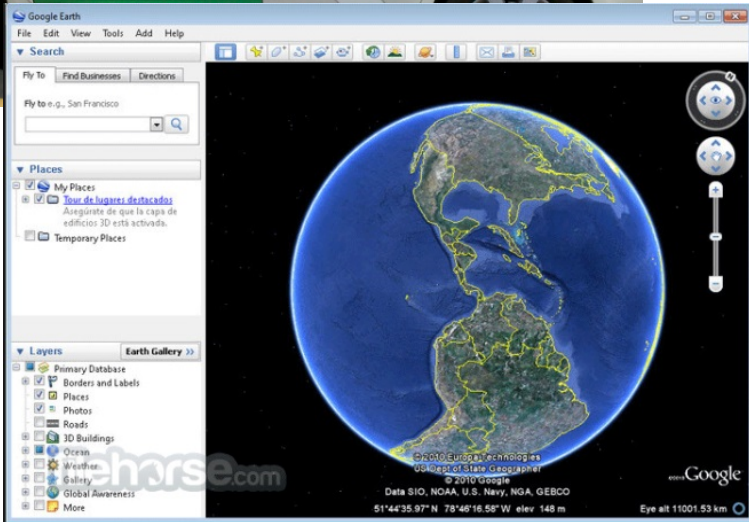
Execution Services
“Executing the smart spend”

**Payment Plans | EAM Integrations | Engineering | Rehab |
Observation Coding | IT services | Project management |
Select field work**

BUSINESS MODEL COMPARABLE

Above Ground...

...Below Ground



TRUSTED GLOBAL PARTNER



Conventional Approach

Decisions made with incomplete information

'Institutional' knowledge

Archived information. Multiple sources. 'Data exists'

Reactive 'run-to-failure' practices (O&M / Rehab). Higher risk. More costly.

Reactive/defensive regulatory compliance programs. Higher risk. More costly.

Task/work based approach to the system

REDZONE Approach

Decisions made with complete information

Baseline benchmark data

Analytics. **One primary Source.** 'Data is useful'

Proactive fact-driven practices (O&M / Rehab). **Less Risk. Saves Money. ROI**

Proactive fact-driven regulatory compliance programs. **Less risk. Saves Money.**

System based approach to tasks/work.

Trenchless

TECHNOLOGY, FEBRUARY 2014

“Having our system-wide data in ICOM3 allows us to be prudent with our spending based on the true current state of the collection system. Based on our findings, we were alerted to some potential failures. We have been able to allocate funding to address these findings before they become major issues. In particular, we have an updated, targeted root control program.” **PCWASA MANAGER**

“With the YES baseline data in ICOM3, we have successfully tripled our pipe lining budget and we know the money is being cost-effectively spent. Whereas in the past it was difficult to recommend sewer projects and request funding based only on crew reports and limited information”
EAST MOLINE ENGINEER



“After DEP officials reviewed the authority’s efforts to improve its collection system management they removed the consent order and cancelled the requirement to construct a \$3 million pretreatment plant”
RIMERSBURG PA CASE STUDY



NORTHERN KENTUCKY SD1

- Avoidance cost savings over \$400,000 YR 1
- Increased In-house Inspection Production by 110% between 2008 and 2011
- Reduced in-house CCTV inspection costs by more than 25%
- Reduced Dry Weather SSOs by 54%
- Dry Weather SSOs are 50% below industry benchmark
- From 2009 to 2011 increased Asset Renewal by 500% & Reduced Renewal Costs by 71%



FORT WORTH, TX

Ongoing internal analysis of proactive MSI inspections of large lines in advance of other O&M activities.

- \$4.6M+ in targeted cleaning savings
- \$1.9M+ in avoided emergency response and bypass

THANK YOU

For more please visit
www.redzone.com

