



YOUR TRUSTED ENVIRONMENTAL PARTNER SINCE 1962

SALES | RENTALS | PARTS | SERVICE



TERRITORY MANAGER

Central Illinois



Over 20 years in municipal and contractor environmental equipment sales and service.

Brad Franklin

TERRITORY MANAGER

Southern IL/STL County

Providing support to contractor
and municipal customers in the
environmental industry for 13
years

Kevin Foppe



ABOUT US

Serving MO, KS & IL

Key Equipment & Supply Co. delivers dependable equipment, parts, service, and rentals to municipalities and contractors across the Midwest. For over 60 years, cities, counties, public works departments, and contractors have relied on us to keep fleets running and communities moving.

Why Choose Us

We support municipal fleets and contractors with two full-service facilities, stocked parts, and factory-trained technicians –delivering faster repairs, reduced downtime, and dependable service when it matters most.

OUR PRODUCT LINE



KEY TRACKER®

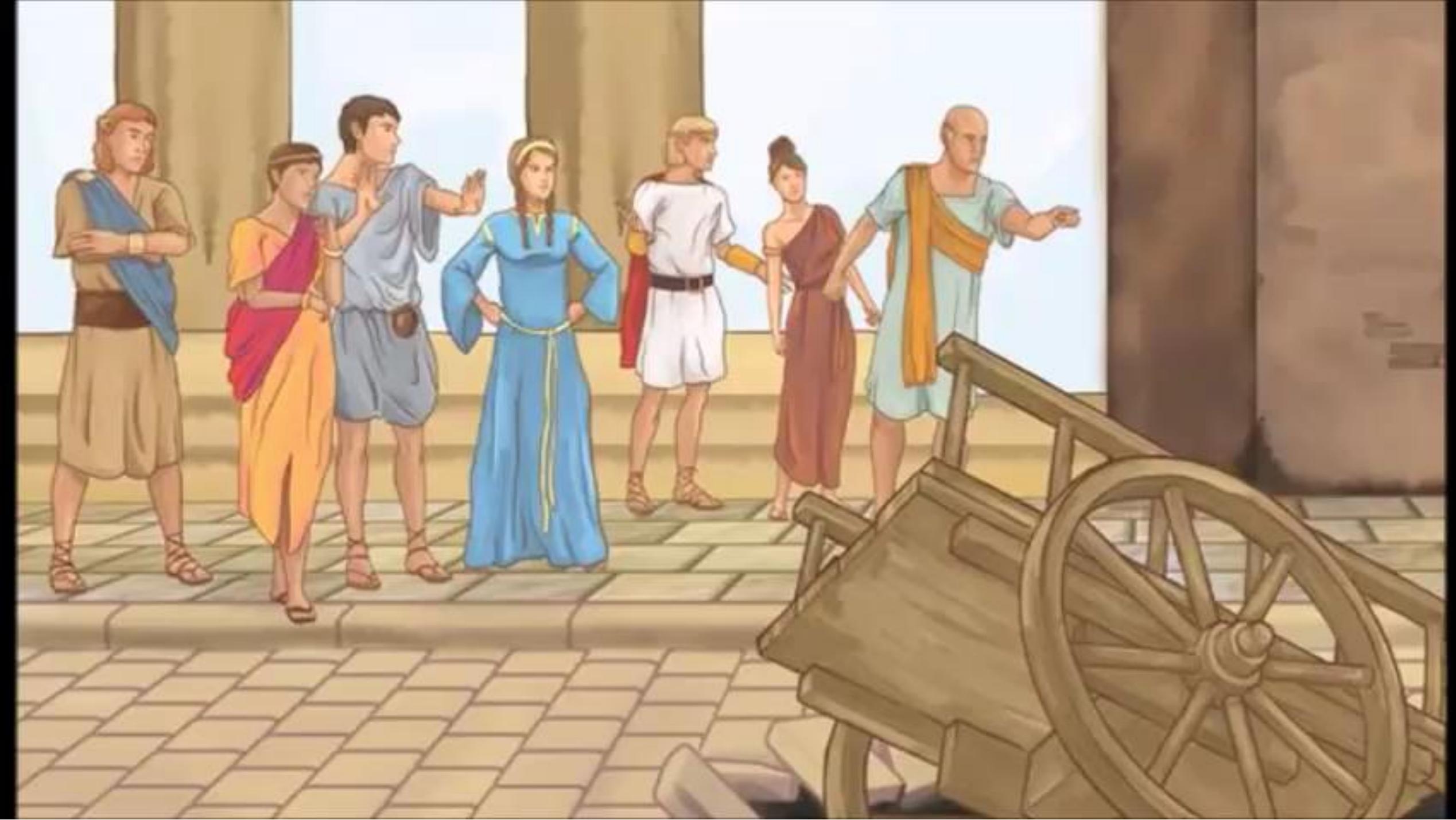


A Brief History of Wastewater Collection

Systems

- The first known method of human waste disposal was dig a hole and fill it up. When full, cover it up, and dig a new hole
- Early sewage treatment was to make a passage of raw sewage to a natural body of water, a river, creek or ocean, where it would be easily diluted and dissipated
- Early communities were often built next to water sources. Rivers would often double as a crude form of natural sewage disposal
- Earliest known wastewater systems 3500 BC in modern day





INSPECTING/CLEANING SMARTER

For decades, we've used costly, time-consuming CCTV as our sole tool for understanding pipe condition.

We can no longer afford to *"do it the way we've always done it"*.

This presentation outlines a game plan- to use our diminishing resources more effectively, using technology, resulting in

Key Equipment & Supply Co.

PHASED ASSESSMENT STRATEGY FOR SEWERS (PASS)

A Plan for
Understanding
Sewer Condition
Quicker, With
Fewer Resources

- Maintain an up-to-date understanding of collection system condition.
- Meet environmental regulations.
- Prevent infrastructure failures (SSOs, residential backups, wet weather discharges, costly and unpleasant emergency backups).
- Prioritize maintenance activities.
- Reduce maintenance costs
- Reduce environmental impact

All to be done with fewer and fewer resources

- Limited and/or diminishing resources
- Smaller/limited budgets
- Fewer personnel
- Increased responsibilities
- Accelerated deterioration of infrastructure
- Less equipment
- Aging equipment/higher maintenance costs

Before doing
any
maintenance
& cleaning,
how about
trying some
Inspection
Technology
first?



FIRST METHOD OF INSPECTION (Pole Camera)



- Used to inspect manholes and pipes quickly
- Can be used to inspect 4" pipe and up in deep manholes up to 30'
- Excellent video and picture quality
- Quad Haloptic illumination LEDs and reflectors
- Priced similarly to push cameras and jet cameras
- Ability to zoom 400'



WHAT CAN
YOU DO WITH
ONE?



QUICKVIEW

BY ENVIROSIGHT

06/05/2017 10:06 AM

1,0X

95P

-2,6DEG

GEO-POS N/A



6445303

UP STREAM PIT POST
2016/18/10 11:32 AM

1.0X

100P

0.8DEG

GEO-POS...

Wichita Stormwater Works Smarter Across Inspection, Cleaning and Rehab

Posted by Allison Symonds on Apr 25, 2022

When the City of Wichita's Stormwater Utility Division was tasked with assessing its entire stormwater collection system in 2018, estimates placed the project completion time at greater than 40 years. Their lone CCTV van set to work, but it was slow going.

Darrin Deutscher, General Supervisor II for the Stormwater Utility Division and a 33-year veteran worker for the City of Wichita, Kansas, wasn't sure how to increase efficiency. But it was clear the Stormwater Utility Division needed to consider other options.

He credits John "Red" Phillips, another General Supervisor II in the Stormwater Utility Division, with finding the answer. *"Red started looking around. He reached out to Key Equipment, and Nate Miller turned him on to Quickview and brought one around for testing. The price point was right, and we got four of them for less than another CCTV system."*

And that 40-year or greater inspection timeline? *"With the four pole cameras,"* Deutscher notes with a chuckle, *"We can do the whole city in five years."*

Advantages and Disadvantages of the Pole Camera

Advantages :

- Quick & simple set up of unit
- Quick assessment
- Almost no manual labor involved
- App is very user friendly
- HD video & excellent photos

Disadvantages :

- Can not make PACP type inspections
- You can only see as far as the pipe is straight

phase

1



Zoom survey camera
performs preliminary assessment
(100% of pipes).



Is pipe free of?:

- defects
- deterioration
- grease buildup
- debris
- roots
- offsets
- obstructions

yes

assessment
complete

no

proceed to
Phase 2

Any
questions
about the
Pole
Camera?



SECOND METHOD OF INSPECTION (Push Camera)



- Most common equipment used for line inspection
- Capable of inspecting pipe size from 1.5" - 12"
- Affordable & Durable
- Straight forward operation

WHAT CAN A PUSH CAMERA HELP YOU DO?

Capture accurate live video & photos of current in-pipe conditions and:

- View obstructions/blockages (Roots, Vermin, Deposits) and anything that shouldn't be there
- Find Cracks, Fractures, Holes, Broken Pipe, Offset joints etc.
- Check for open-flow of line and view taps coming into line
- Pinpoint location of the above issues with the cable footage counter and sonde locating
- PACP type reporting capabilities

Disadvantages: Takes manual labor. The farther you go the harder it gets. Limited to amount of cable on reel. Can be hard to get past heavy debris.





What to look for when choosing a Push Camera?

- Cable Reel Size
- Type of Cable
- Camera Head Type
- Locating Abilities
- On Screen Text
- Recording and Storing Capabilities
- Reporting Capabilities
- Review Footage
- Offloading Data
- Accessories needed



006 .8

Any
questions
about the
Push
Camera?



ANOTHER METHOD OF INSPECTION (Jet Camera)



- Fairly New Technology
- Used in conjunction with a jetter trailer, truck or combo machine
- Capable of inspecting Pipe Size 6" and up
- Affordable and durable

What you can do with a Jet Camera!

- Record video of current pipe conditions (same as the push camera)
- Pre-cleaning inspection of main lines
- Help you determine what equipment is needed for the job
- Post-Cleaning Verification
- Video Records to SD Card.
Newer Version uploads to a Tablet for viewing via a the Sewerlink App



1.5-inch torque main (forward)

 **jetscan**

www.envirosight.com

Why See What You're Jetting?

tool
selection

See whether a pipe is clogged with gravel, grease, mud, roots or sludge, and pick the best nozzle.

safety

Confirm absence or presence of cross-bore electrical, water or gas, and preview pipe before root cutting.

cleaning
confirmation

Document whether cleaning was successful using before/after footage.

pipe
assessment

Identify offsets, collapses, infiltration and other maintenance needs—without dedicated CCTV.

understand
hazards

Identify collapses, protruding taps, root balls and anything else that could trap a nozzle.

problem
resolution

Determine the source of problems on a call-out, and who is responsible (municipality or rate-payer).

cost
savings

Keep CCTV crews on-plan and give them the independent ability to instantly view pipe maintenance and structural conditions.

A LITTLE MORE INFO ON THE JET CAMERA!

Advantages

- Easy to use
- Quick deployment
- Little manual labor
- Fits multiple hose sizes
- Works with most PSI and GPM jetting calculations

Disadvantages

- Cannot view video in live time
- Inspection limited to amount of hose on reel
- Cannot make a PACP report

Any questions
about the Jet
Camera?



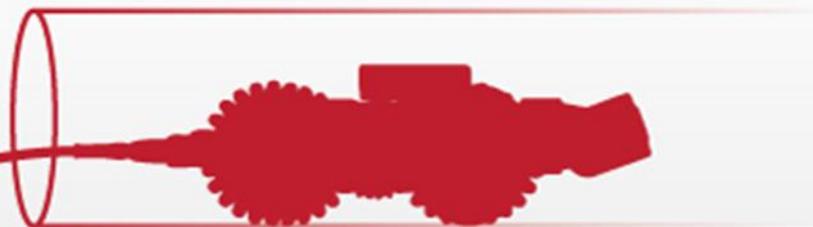
FINAL STEP: TECHNOLOGY CCTV INSPECTION CRAWLER

- Gathers the most detailed video information
- Pan, Tilt and Zoom capabilities
- True footage representation

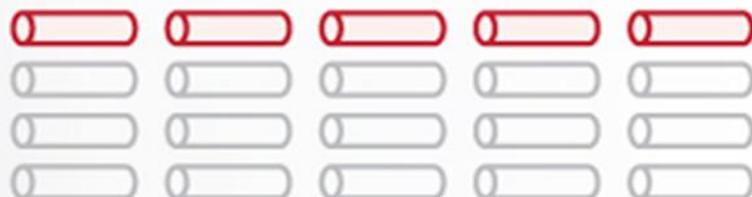


phase

3



CCTV crawler performs final detailed inspection of pipes that fail Phase 2 (app. 25% of pipes).



What methods and priority will be assigned for repair, rehab or replacement?

assessment
complete

BENEFITS

To understand the benefits of this workflow, look at the productivity and cost advantages of a phased approach compared to comprehensive CCTV inspection.

ENVIROSIGHT LLC

Envirosight

1 ← 2

614 mbar	86 °F					
2012-03-16 17:36:55	14.17 ft/min	-0.18 °	4.97 °			
668 mbar	139.65 ft	0 °	0 °	93 °F		

PRODUCTIVITY BENEFITS

		full CCTV		PASS program	
		% pipes	productivity	% pipes	productivity
productivity	zoom survey (Phase 3)	-	-	100%	10,000 ft/day
	video nozzle (Phase 3)	-	-	65%	3200 ft/day
	crawler CCTV (Phase 3)	100%	2000 ft/day	25%	2000 ft/day
	average		2000 ft/day		2336 ft/day
				gain 17%	

COST BENEFITS

		full CCTV		PASS program	
		% pipes	cost	% pipes	cost
cost	zoom survey (Phase 3)	-	-	100%	\$0.15/ft
	video nozzle (Phase 3)	-	-	65%	\$0.56/ft
	crawler CCTV (Phase 3)	100%	\$1.25/ft	25%	\$1.25/ft
	average		\$1.25/ft		\$0.83/ft
		save 34%			

How about using camera technology to avoid HAZARDS!?



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PASS IN REVIEW

PASS consists of multiple assessment phases:

- Zoom camera survey for 100% of pipes.
- Video nozzle and push camera for 65% of pipes when needed.
- CCTV crawler inspection for 25% of pipes that need it.

By implementing *PASS*, you can:

- Boost productivity 17%
- Reduce costs 34%