digital AECOM

pipe·insights

Technology to improve the speed and accuracy of sewer inspection programs

pipeinsights.com

"

The functionality in PipeInsights really helps to speed up the processing and delivery of CCTV inspections. We can save money while improving inspection quality!"

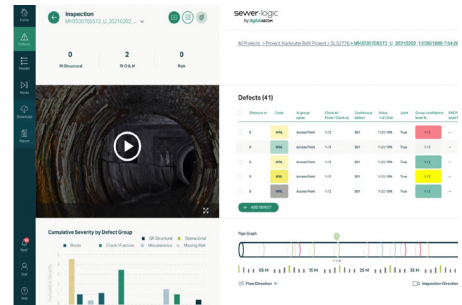Scott Belz, Field Services Manager

Improve sewer inspection speed and accuracy

Reviewing and validating CCTV sewer inspection data is a critical step in selecting the right rehab strategy, but it can be time-consuming and inefficient. That's why AECOM created PipeInsights™, a platform that processes CCTV inspections more effectively and provides engineers with information they need to make decisions faster and more consistently than ever before.
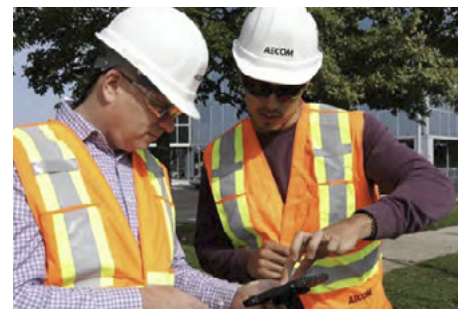
Our solution uses the power of AI and the convenience of a cloud-based platform to enhance decision-making. This proven technology is founded on decades of sound engineering practices and has been validated on hundreds of thousands of defect images and real-world inspections.

PipeInsights allows users to upload inspections to the cloud, perform QA/QC of the defect coding, diagnose problems, visualize the health of your system and select the most appropriate rehabilitation strategy from anywhere. PipeInsights's superior AI capabilities employ AECOM's advanced machine learning algorithms to flag potential coding errors and missed codes, or automate the sewer defect coding process entirely. Once defect codes are approved by the engineer, PipeInsights will then suggest the optimal structural or operational rehabilitation strategy using AECOM's embedded decision framework.
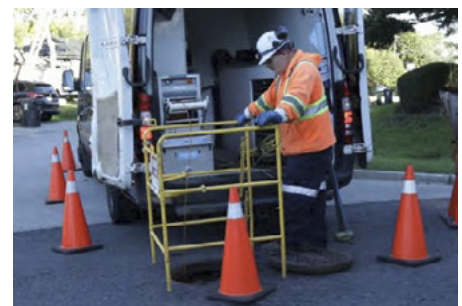
The system is already trained to recognise 95% of the most common defects and continues to learn and improve as new inspections are added. PipeInsights ensures your CCTV inspections are of the highest quality, enabling you to develop accurate pipe maintenance or rehabilitation plans and strategies to manage your sewer system with confidence.
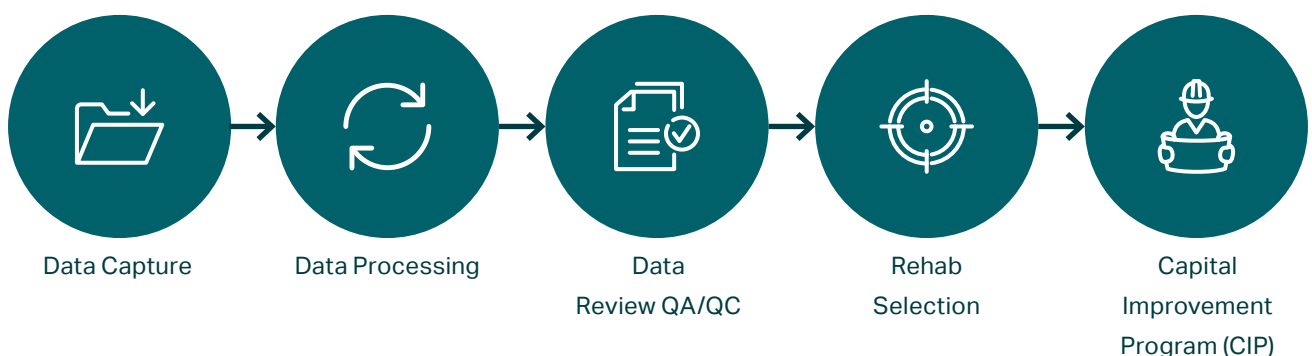

Cloud-based storage, retrieval and data processing

Mobile access to sewer inspections for rapid response

Integrates with field operations

Supports the full Capital Improvement Program (CIP) development process

Data Capture → Data Processing → Data Review QA/QC → Rehab Selection → Capital Improvement Program (CIP)

Key benefits of PipeInsights

– Less time spent inspecting videos allows for more time engineering solutions

– More efficient condition assessment and CIP development

– Pipe scores in multiple protocols/standards

– Enhanced understanding of overall sewer system health

– Reliable analytics for defensible decision-making

– Greater understanding of system defects and how they propagate over time

– Easy access to sewer inspections via GIS interface

– Expedited QA/QC inspections using video frame filters

– Insight into CCTV contractor and operator performance with opportunities for valuable feedback and training

– Enhanced communication across project teams

– Improved project and program management

– Greater consistency and accuracy minimizes operator subjectivity

– Secure data storage and retrieval via the Azure Cloud

– Immediate access to inspections from the office or field

– Integration of inspections and pipeline scores with CMMS and other Asset Management systems

– Review and approve suggested operational or structural rehabilitation options

Platform for enhanced communication and collaboration

Geospatial functionality for easy use

Improved defect detection through artificial intelligence (AI)

Find out more

Scan this QR code or visit *PipeInsights.com* to find out more.

Register for a demo or a free trial to see how PipeInsights can help improve the speed and accuracy of your sewer inspection programs.

Key features of PipeInsights

1

Critical functionality

- Upload inspections easily and have the AI perform QA/QC in the background
- Interactive GIS interface
- Stream videos rapidly from the Azure cloud on any device
- Automatically relates pipes with reversal inspections to maintain consistency of data
- Easy filter, search and lookup functions for pipe and inspection attributes
- Filter video frames for detected defects for rapid review and analysis
- Modifications to defect data immediately update pipe ratings
- Selects intervention needs based on defect severity
- Adjustable video speed for quick reviews

2

Maximum flexibility

- Applicable to any type of pipeline material
- Classify, detect and localize defects using either defect group or PACP modifier
- Faster video processing with fewer false negatives/positives via parallel computing
- Adaptable to multiple sewer protocols (PACP, WRc, etc.)
- Easy access to inspections from any location

3

Enhanced communications and project management

- Dashboards with business intelligence (BI) functionalities
- Manage multiple sewer projects or programs simultaneously
- Customize access permissions for individual users
- Share information easily among stakeholders for faster decision-making
- Interactive interface allows for tagging and notifications
- Detailed reporting on the performance of the camera operators
- Visualize deterioration process by comparing defects and multiple pipe inspections over time

4

Superior Artificial Intelligence (AI)

- Optimized defect detection using a combination of computer vision and machine learning algorithms to create a robust AI
- Exceptional accuracy informed by hundreds of thousands of trained images
- Detection of lining defects in rehabilitated pipelines
- Trained on images annotated by NASSCO certified staff and systematic QA/QC processes
- Continues to learn with you and from you - your engineers and NASSCO certified staff remain in full control

About AECOM
AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from advisory, planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical and digital expertise, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a Fortune 500 firm and its Professional Services business had revenue of $13.1 billion in fiscal year 2022. See how we are delivering sustainable legacies for generations to come at aecom.com and @AECOM.

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