

## Pipeline Assessment & Certification Program

For years the wastewater industry has shared technologies that deal with the repair/replacement of their aging infrastructure. An example is the development of a closed circuit television (CCTV) system, which has progressed to the self focusing, zoom, rotating, color systems available today. Millions of dollars are spent every year developing and improving existing technologies and the tools used to maintain and repair our nation's sewers. Until recently, the process by which an asset condition was identified and catalogued has not advanced as rapidly. Owners still search for the magic formula to tell when and how to address each identified pipe section failure within their collection and interceptor systems. They want to know when, how and why sewers fail and need to know the consequences of potential failures. A strong focus on asset management goes a long way toward answering these critical questions but requires accurate, consistent and timely information about the sewer system condition. Looking at a collection system using "risk management" is not a new concept, but because there was limited means and standards to assess the condition of a pipe, little was done with condition assessment prior to the adaptation of CCTV for sewers in the late 1960's.

In 1972 the United States implemented the Clean Water Act which has subsequently incorporated the Government Accounting Standards Board Statement # 34 (GASB 34) to value assets and more recently is advancing the capacity management, operation and maintenance (CMOM) concept. That concept will basically require a utility to manage their sewers by knowing what they have, the condition it is in and have a program for best practice operation and maintenance (O&M) and a capital improvement plan (CIP). Good asset management starts with good asset information.

- What do I have? GASB 34
- What condition is it in? CMOM
- How well is it working? NPDES Permit

In 2002 the National Association of Sewer Service Contractors (NASSCO), in conjunction with Water Resources Council (WRC), developed a method of defect coding and rating for use in the United States. This program, known as the Pipeline Assessment and Certification Program (PACP), rates and ranks common individual defects within a pipeline. PACP categorizes defects in four main categories (Structural, O&M, Construction and Miscellaneous) each of which has subcategories. (See sample categories lists on back page.)

Because there are generally a high percent of failures occurring in a small percent of the pipe, and not all defects are equal in severity, rating the pipeline by section becomes important from both a prioritization and repair evaluation standpoint. Using NASSCO's PACP format the individual defects are coded and then graded numerically by severity. The types and frequency of defects observed in a pipe section and the sum of their associated numerical grade becomes the Internal Condition Grade (ICG). This ICG can be displayed on a map by color code to consistently track observed defects. At a glance it can be determined which pipe sections are most likely to fail, when failure might be expected to occur and the location and magnitude of the impact to residential and commercial areas. A CIP can then be developed enabling the Owner to be proactive as opposed to reactive thus saving both O & M money as well as limiting future consumer inconvenience and mitigating potential claims. *(Over - Continued on back)*

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Yes, I am interested in learning more about upcoming scheduled Florida PACP classes

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# Pipeline Assessment & Certification Program

(Recap from front)

With advances in technology, the physical tools to assess sewers has until recently outpaced the methods to report, store and use the information gathered. With PACP, it is now possible to have a ready made work order system, O&M plan and CIP. Once a system has been assessed, the asset owner has a cost-effective way to develop a repair matrix by time and technology, using his own operators and reviewers who are trained and certified in the PACP.


Below are sample Defect Codes. Also please see attached NAASCO-PACP Code Summary.

 WRc

## Typical Structural Performance Grades (SPG)

Grade 5	<b>Collapsed or collapse imminent</b>
Grade 4	<b>Collapse likely in foreseeable future</b>
Grade 3	<b>Collapse unlikely in near future</b>
Grade 2	<b>Minimal collapse risk</b>
Grade 1	<b>Acceptable structural condition</b>

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## Structural Defects


12 groups, as follows:

- Crack (C)
- Fracture (F)
- Broken (B)
- Hole (H)
- Deformed (D)
- Collapse (X)

These six defects define progressive degrees of pipe structural failure

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## Structural Defects (Cont'd)

- Joint (J)
- Surface Damage (S)
- Lining Defect (LF)
- Weld Failure (WF)
- Point Repair (RP)
- Brickwork (B)

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## Operational and Maintenance

Five groups:

- Deposits (D)
- Roots (R)
- Infiltration (I)
- Obstacles (OB)
- Vermin (V)

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Place  
Stamp  
Here

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