

Chapter 16a

Non financial measures

Sewerage service

serviceability indicators

Covering:
Enhanced measures for sewerage assets

Non financial measures

Chapter 16a

Sewerage service serviceability indicators

This information is required to inform an assessment of serviceability to customers. There is one block of information, block A to be reported on in AIR09.

Any data relevant to the serviceability of PPP assets should be reported in the associated commentary.

Guidance

Sewers – Maintenance

Block A covers sewer maintenance activity. This block now splits out repairs to sewer collapses reported in table 16 into rising main and gravity sewer repairs. Rising mains are pipes that carry sewage by pumping under pressure or under suction (for example where sewage is moved under vacuum) from a powered asset (for example a pumping station). The aim is to inform understanding of underlying trends in the failure of asset types that make up this group of assets

Sewer blockages are also included, and their number is calculated from the number per 1000km of sewer from table 16.

Guidance for reporting equipment failures.

The intention is to capture malfunctions which could have a detrimental impact on service to customers or the environment. Do not exclude such events where there was no actual effect.

This indicator is focussed on equipment on the sewerage network and should exclude all plant and equipment on sewage treatment sites. The Company should explain in the commentary whether failures of terminal pumping stations have been included.

Equipment Failure	Description
Pumping Station (Foul, Surface Water or Combined)	The failure of a pumping station (i.e. inability to pump sufficient forward flows) reported as one failure regardless of numbers of failed components contributing to the total failure. N.B. Exclude power grid failure events except where the company's standby generation facility failed.
Overflows (CSO and Emergency)	The failure of an emergency or combined sewer overflow to operate properly (i.e. as intended) leading to increased likelihood of upstream surcharge / flooding and / or un-consented discharge of sewage to environment. Failure to operate as intended could be, for example, as a consequence of blocked screens, weirs 'blinded', penstocks failing to operate.
Penstocks	The failure of any sewerage infrastructure penstock or flow shut off valve in a fixed position.
Anti-Flood Valves	The failure of anti-flood valves protecting customer property from flooding. Include both standard mechanical and pumped anti-flood valves, and report if failed in closed or open positions.
Vacuum Sewerage Systems	The failure of a vacuum sewerage system, or parts of a system, leading to surcharge and / or customer flooding including individual failures of vacuum pots.
Storage Tanks	A failure to maintain sufficient capacity of a storage facility leading to increased likelihood of customer flooding and / or un-consented discharge of sewage to environment. Include failures of any integral return pumping and screening / maceration equipment that impact on

	required capacity
Flow Control Devices (i.e Hydrobrakes)	The failure of a flow control device to operate properly leading to upstream or downstream surcharge / flooding.
Real Time Telemetry Control Systems	The failure of a real time control system to operate properly leading to increased likelihood of upstream or downstream surcharge / flooding or un-consented discharge of sewage to environment.
Oil Interceptors	Failure of an oil interceptor to operate properly leading to an increased likelihood of un-consented or polluting discharge to the environment.
Chemical Dosing	The total failure of chemical dosing plant over an extended period (i.e. not breakdowns responded to and resolved promptly) leading to increased likelihood of odour from the sewerage network.

It is the failure of the equipment to operate as intended which is important and so failures should not be excluded on the basis of the scale of the actual, or potential, detrimental impact on service to customers or the environment.

Additional Guidance on Pumping Station failures

A blockage at a sewage pumping station, which had, or was likely to have, a detrimental impact on service to customers or the environment (e.g. causing the pumping station to overflow), would qualify as an 'equipment' failure.

Reporting for sewage pumping stations can be slightly more complicated because duty & standby pumps are often provided to give continuity of service if one blocks. The company therefore needs to ask further questions to satisfy itself that an event constitutes an equipment failure.

For example:

Q1: If there is no standby pump and a pump blocks, has it been unblocked to either resolve a service problem or avoid one? Answer: Yes.

Q2: If duty/standby pumps are available for the full design flow, then should this count as a failure? Answer: Not if the standby pump operates successfully, because that's how the station has been designed to operate. However if the second pump gets blocked or fails to operate successfully, then yes, it should be counted as 1 pumping station failure.

Note – it's about the station's failure to operate (i.e. inability to pump sufficient forward flows), rather than the failure of an individual pump.

Company commentary

Sewers – Maintenance

The company is expected to comment on significant changes from the reported figures for 2006/07. They should also record the location, date and time of gravity sewer collapses, rising main breaks, blockages and equipment failures with a view to this information being used for spatial analysis and an update of their underground asset management plan.

The company should state what historical data they have on sewer blockages, and indicate whether they will be able to provide data suitable for trend analysis. If the company is content to provide this in this Annual Information Return then it should do so, otherwise it should say when sufficiently reliable data could be made available.

Guidance to Reporters

Sewers - Maintenance

The reporter should:

- Investigate and comment on the integrity of the data capture and retrieval systems for determining the split between rising mains and gravity sewer collapses and confirm relevant confidence grades;
- Confirm that the sum of rising main breaks and gravity sewer collapses is equal to the total number of sewer collapses implied by Table 16;
- Confirm where relevant the correct reporting of PPP assets;
- On blockages, to check the company systems and report on its ability to provide historic data, so as to establish a trend;
- On equipment failures comment on the company's interpretation of 'equipment failure' and whether the trend in such numbers gives a good indication of the service capability of these assets. Also to comment on advantages and disadvantages for monitoring performance of 'equipment' with non-infrastructure maintenance; and
- Review the nature of inclusions and exclusions and confirm that the data reported aligns with the company statement and what greater clarity in definitions might be helpful to assist in consistent reporting within the industry.

Sewerage service non-infrastructure

Ofwat introduced reporting on sewerage service non-infrastructure maintenance in 2008/09 after a two year trial period. This additional reporting requirement was introduced in order to address a gap identified in a review of serviceability indicators by UKWIR and is designed to provide a better picture on the future service capability of the asset systems. It is intended to provide information on the underlying performance of the non-infrastructure assets that deliver service, particularly treatment, and on the underlying performance of the assets that convey sewage.

The UKWIR review recommended that an indicator based on the concept of unplanned maintenance be developed. Discussion with companies in England and Wales revealed that whilst this would be useful, maintenance data is structured in different ways that reflect the maintenance planning and recording procedures of each company. It is therefore impossible to standardise on a definition without requiring companies to change the way data is captured and used. Therefore the measure would only be useful to the companies if the method of measurement fits with each company's own internal recording procedures and governance.

Two forms of indicator were suggested:

- a count of unplanned jobs; and
- a percentage availability of (critical) plant.

But it was acknowledge that there may be others.

Each company was therefore asked to draw up its own specification of a suitable indicator or indicators and reporting procedures based around the generic definition. The aim being to inform potential change in the likelihood of service failure. The company had to explain its rationale for the indicator(s) and the data used within the context of its maintenance strategy. The indicator(s) was supposed to closely align with the presentation of metrics used to inform the company's Board of the ongoing state of its mechanical, electrical and instrumentation and control equipment.

The counting procedures were to focus on capturing relevant data from the company's maintenance systems at a level of granularity and materiality for this purpose. A rising trend in the indicator would indicate deterioration, a reducing trend would indicate improvement, and a stable trend will indicate stability, for an unchanging size in asset base. The data was to be held at one or more levels of aggregation, to inform (at least in the commentary) the distribution of numbers among different asset types e.g. pumping and treatment. The companies had to include specification for what is captured in the annual time frame to ensure consistent reporting year on year, e.g. jobs raised or jobs closed. Ofwat recommended 'jobs completed in the year', consistent with other annual information return activity reporting.

NIAUR are considering the introduction of a similar indicator in future annual information returns and would ask the company to draw up its own specification of a suitable indicator or indicators during 2009/10 to allow trial reporting to commence in AIR10 if required. The rationale for the choice of indicator(s) and the data used within the context of its maintenance strategy will need to be explained.

Table 16a line definitions

A SEWERS – MAINTENANCE

1	Total number of rising main failures	nr	0 dp
Definition	Number of repairs to rising main pipe breaks.		
Primary Purpose	Confirming delivery of key outputs and service.		
Processing rule	Input		
Responsibility	Network Regulation Team		

2	Total number of gravity sewer collapses	nr	0 dp
Definition	Number of repairs to gravity sewer collapses.		
Primary Purpose	Confirming delivery of key outputs and service.		
Processing rule	Calculation: table 16 line 12 multiplied by table 16 line 14 divided by 1,000 minus table 16a line 1.		
Responsibility	Network Regulation Team		

3	Total number of sewer blockages	nr	0 dp
Definition	Number of sewer blockages cleared.		
Primary Purpose	Confirming delivery of key outputs and service.		
Processing rule	Calculation: table 16 line 13 multiplied by table 16 line 14 divided by 1000.		
Responsibility	Network Regulation Team		

4	Total number of equipment failures	nr	0dp
Definition	<p>The total number of sewerage equipment failures. The total number of sewerage equipment failures which had, or were likely to have, a detrimental impact on service to customers or the environment.</p> <p>'Equipment' includes</p> <ul style="list-style-type: none"> • Pumping stations (foul, surface water or combined) • Overflows (CSO and emergency) • Penstocks • Anti-flood valves • Vacuum sewerage systems • Storage tanks • Flow control devices (e.g. Hydrobrakes) • Real-time telemetry control systems • Oil interceptors • Chemical dosing. 		
Primary Purpose	Confirming delivery of key outputs and service.		
Processing rule	Input		
Responsibility	Network Regulation Team		

CHANGE CONTROL SHEET

CHAPTER 16a

2008/1.0	First issue of chapter for the SBP period
2009/1.0	Second issue of chapter for the SBP period <ul style="list-style-type: none"> - Guidance on reporting equipment failures amended - Line 2 processing rule amended for clarity - Notification of potential future reporting on sewerage service non-infrastructure added - Clarification on PPP reporting