Our Contribution to Yorkshire: Methodology Report

Prepared for Yorkshire Water

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AECOM

Quality information

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Contents

Acronyms

Acronym	Description
ARFS	Annual Report and Financial Statements
APR	Annual Performance Report
BAS	Biosolids Assurance Scheme
BAME	Black, Asian, and Minority Ethnic
BBS	Breeding Bird Survey
CEH	Centre for Ecology and Hydrology
CFR	Corporate Family Rating
CHP	Combined Heat and Power
CMex	Customer experience Measure
CO_2e	Carbon Dioxide equivalent
Defra	Department for Environment, Food and Rural Affairs
DMex	Developer services experience Measure
EA	Environment Agency
ENCA	Enabling a Natural Capital Approach
FTE	Full Time Equivalent
GHG	Greenhouse Gas
ha	Hectare
hh	Household
IEMA	Institute of Environmental Management and Assessment
INNS	Invasive Non-Native Species
KPI	Key Performance Indicator
kWh	kilowatt hour
l/hd/d	Litres per head (i.e. per person) per day
LGBTQ	Lesbian, Gay, Bisexual, Transgender, and Questioning
LTIR	Lost Time Injury Rate
MEAV	Modern Equivalent Asset Value
Ml	Megalitre
MWh	Megawatt hour
NEA	National Environmental Assessment
NIC	National Insurance Contributions
ONS	Office for National Statistics
ORVal	Outdoor Recreation Valuation tool
PAYE	Pay as You Earn
PSR	Priority Services Register

Acronym	Description
QALY	Quality Adjusted Life Year
RCV	Regulatory Capital Value
R&D	Research & Development
ROI	Return on Investment
SIM	Service Incentive Mechanism
SME	Small or Medium-sized Enterprise
SROI	Social Return on Investment
SSSI	Site of Special Scientific Interest
t	Tonnes
T&D	Transmission & Distribution
TIVA	Total Impact and Value Assessment
UKWIR	UK Water Industry Research
VAT	Value Added Tax
WINEP	Water Industry National Environment Programme
WTP	Willingness-To-Pay
YW	Yorkshire Water

Introduction

Context

Yorkshire Water is a water company in the UK that delivers water, sewerage, and environmental services to over 5 million people and 130,000 businesses. This document is part of a suite of publications sharing the findings and methodology of Yorkshire Water's latest work to understand the impact and value, both good and bad, they make and manage as an organisation. The main 'Our Contribution to Yorkshire' report summarises the findings of this work and is available at: https://www.yorkshirewater.com/capitals.

This document provides the methodology and data sources used in the assessment. The document, and the methodology contained within it, has been prepared by AECOM on behalf of, and working closely with, Yorkshire Water. The methodology builds on Yorkshire Water's previous work and incorporates the latest national best practice. Aspects of the work were reviewed by an independent third party – DNV GL – to verify and assure the approaches used.

What is 'Our Contribution to Yorkshire'?

'Our Contribution' is the name for Yorkshire Water's work to enhance their understanding of the impacts they have on the environment, society, and the economy, both positive and negative. This approach goes beyond traditional reporting by applying a mix of accounting, economic valuation, and sustainability techniques to quantify impacts across the six capitals, and where sensible, to put a monetary value on those impacts.

The typical approach to 'capital' focuses on financial and manufactured assets. These assets, such as, a water treatment plant for example, can deliver a flow of services – in this case a steady supply of clean water – if they are maintained in good condition. The services they provide have value both to organisations and to wider society, and this value is recorded in a typical financial account.

The six capitals approach extends this type of thinking beyond financial and manufactured capital assets to also consider natural, social, human, and intellectual capital – as defined in the diagram below. By looking at all of these assets, rather than just focusing on the traditional assets recorded in a balance sheet, a six capitals approach can provide a much more detailed understanding of a company's performance than is captured in standard financial or operational performance reports.

Figure 1. Yorkshire Water's six capitals

Financial capital
Our financial health and efficiency

Manufactured capital
Our pipes, treatment works, offices and IT

Natural capital
The materials and services we rely on from the enviroment

Intellectual capital
Our knowledge and processes

Human capital
Our workforce's capabilities and wellbeing

Social capital
Our relationships and customers' trust in us

The aim of this approach is to examine the impacts and dependencies of Yorkshire Water across the six capitals, assessing the full range of economic, environmental, and social attributes associated with their activities. This work aims to provide a broader view of the risks to Yorkshire Water's services and the value they contribute. It also aims to highlight opportunities where Yorkshire Water can enhance their impact and value, and the inherent trade-offs that need to be considered when making decisions.

This approach has prioritised the impacts which are understood to be the most significant; and the figures do not yet represent the entire 'value' of nature, people, or society. For example, while the approach covers the value to the company of employees' wellbeing in terms of reduced sickness rates, this does not reflect the entirety of its importance to individuals, nor does it reflect the total scope of Yorkshire Water's business interests or responsibilities.

This is the second Our Contribution to Yorkshire report, with the first being published in 2018 and covering the financial year 2014/15. The original report is available here: https://www.yorkshirewater.com/capitals. The new publication covers the period from 2015/16 to 2019/20 in order to examine how Yorkshire Water's contribution has changed since the initial report. The aim in the future is to publish an annual report to allow ongoing and comprehensive monitoring of the Company's net contribution and how it is changing over time. As Yorkshire Water fully matures its approach, its aim is to embed this broader view of impact and value in its Annual Report and Financial Statements (ARFS) as part of an ongoing commitment to evolving best practice and in line with the concept of Integrated Reporting.

Changes since the last report

The methodology for the new assessment has been updated to reflect Yorkshire Water's maturing approach as well as wider developments in best practice impact and value assessment. One shift is a move away from the 'direct, indirect, and enabled' approach adopted previously.[1] Instead, this version of Our Contribution moves towards a 'capitals accounting' approach that follows the latest guidance from Defra and the Natural Capital Committee. Their guidance sets out an approach to Corporate Natural Capital Accounting which is built around a framework of **assets**, **flows**, and **values** (see Figure 2).

Figure 2. Natural capital assets, flows, and values
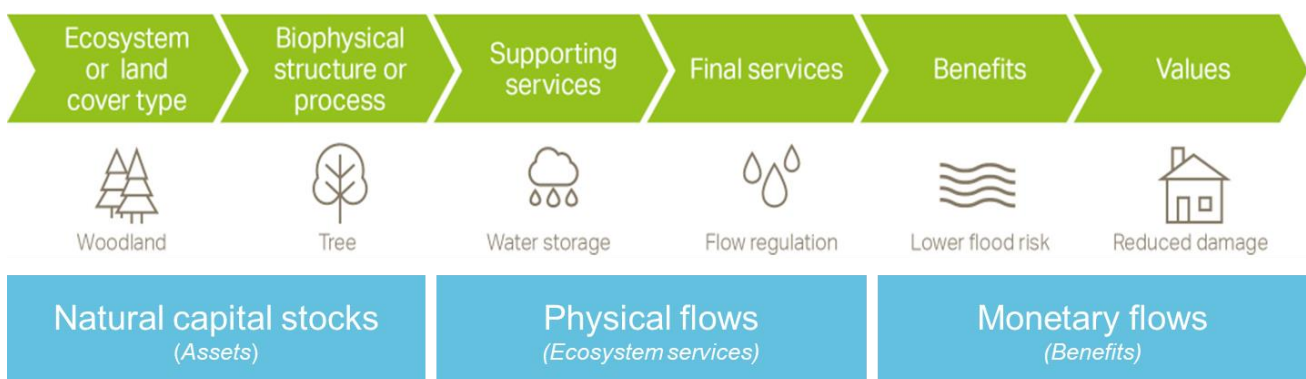
This version of Our Contribution looks at the extent and condition of Yorkshire Water's assets, the physical flows of services and impacts upon them, as well as the monetary value of those impacts. This version of Our Contribution also extends this framework from a focus on natural capital to cover all six capitals – the first time this has ever been done, as far as we're aware (see Figure 3).

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[1] Note, further exploration of indirect and enabled impacts could be a useful future development once Yorkshire Water has refined and tested its approach to assessing direct impacts.

Figure 3. Extending the natural capital approach to social and other capitals
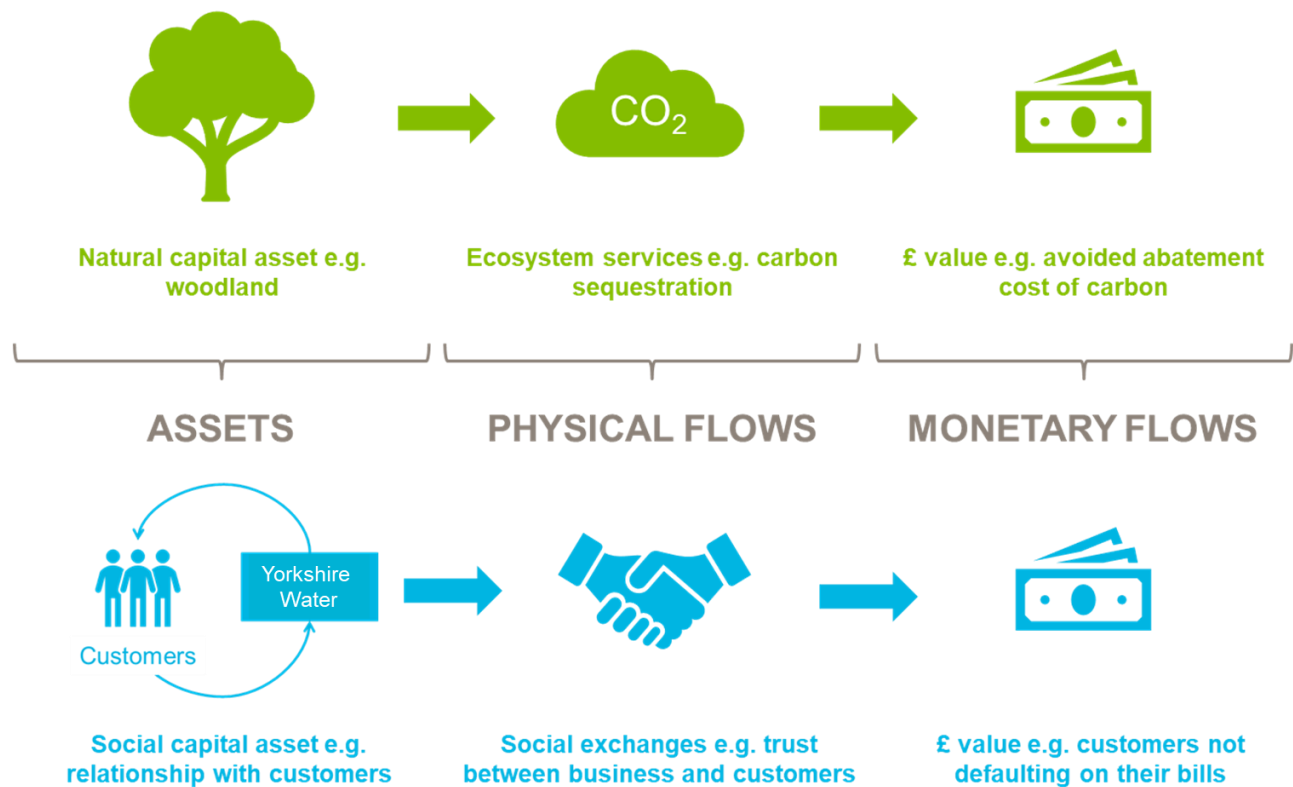
A revised set of metrics and data make best use of Yorkshire Water's most recent available work. The new approach also supports the intent for an annual process in the near future. The result is a richer and more comprehensive set of data than the original version, with the six capital accounts providing a broader picture of the current position and trends over time.

This version of Our Contribution also improves some of the known weaknesses of the previous approach and has included the development of new models and metrics to better understand and measure impacts and dependencies in priority areas.

Finally, the new methodology better aligns with capitals approaches that are being developed and used across the business. What was originally a standalone sustainability assessment and report is now linked to a range of methods, strategies, and models being implemented across Yorkshire Water. This version of Our Contribution has refined the data and metrics to better align the reporting of impacts and value creation with other developing aspects of Yorkshire Water's decision making processes.

The changes to the approach since the original version are highlighted throughout this document and are presented alongside a detailed description of the methodology and data sources employed for each metric.

This document

This document provides the full set of results underpinning the Our Contribution to Yorkshire assessment and report, together with the underlying methodology and data sources. The document is structured around the six capitals: **financial**, **manufactured**, **natural**, **human**, **intellectual**, and **social** capital. Each chapter in the document provides the full results in terms of the assets, flows, and values, for that capital, and the methodology and data sources used to generate those results.

Framework structure

An outline structure was developed on the basis of the findings of the materiality assessment undertaken for the previous report, and using the insight gained from that process. Under each of the six capitals are a series of metrics that provide indicators of Yorkshire Water's assets, impacts, and their values. While some of the metrics may continue to evolve, this structure is expected to remain relatively stable over time. A breakdown of the specific metrics for the physical and monetary flow is set out in Figure 4 below. In total there are over 300 metrics within the model. In order to simplify the presentation of this data in the main Our Contribution report, each metric has been assigned to a broad theme within each type of capital as set out below.

Figure 4. The six capitals framework

Financial capital themes	Financial capital metrics
F1. Taxes	F1.1 Business rates, F1.2 Carbon taxes, F1.3 Fuel duty, F1.4 Abstraction and discharge licenses, F1.5 Employee's PAYE contributions, F1.6 VAT collected from business customers, F1.7 Corporation tax
F2. Salaries	F2.1 Salaries, F2.2 Employer NICs, F2.3 Employee NICs
F3. Pensions	F3.1 Employer pension contributions
F4. Profits	F4.1 Operating profit (inc. exceptionals)
Manufactured capital themes	**Manufactured capital metrics**
M1. Asset Value	M1.1 Value of change in fixed assets over the year (MEAV)
M2. Waste Use and Reuse	M2.1 Waste going to landfill, M2.2 Amount of waste used productively
M3. Renewable Energy	M3.1 Amount of renewable energy generated and used, M3.2 Amount of renewable energy generated and exported
Natural capital themes	**Natural capital metrics**
N1. Water Use and Efficiency	N1.1 Total water abstraction, N1.2 Total amount of water returned to the environment to maintain flows for wildlife and other users, N1.3 Total leakage, N1.4 Total water saved through water saving support measures, N1.5 Total water recycled
N2. Water Quality	N2.1 Net change in bathing water status classifications, N2.2 Length of river water improved, N2.3 Number of pollution incidents (N2.3.1 Number of Category 1&2 pollution incidents, N2.3.2 Number of Category 3 pollution incidents), N2.4 Area of wetland habitat providing water quality regulation
N3. Land, Soil, and Biodiversity	N3.1 Number of farm tenancies, N3.2 Amount of timber harvested, N3.3 Atmospheric pollutants emitted from YW operations, N3.4 Atmospheric pollutants filtered on YW land, N3.5 Area of wetland habitat providing flood regulation, N3.6 Area of grassland habitat supporting pollinators, N3.7 Number of visitors to YW sites, N3.8 Number of houses benefitting from proximity to habitats on YW land, N3.9 Net change in biodiversity units
N4. Carbon	N4.1 Scope 1 GHG emissions (burning fuel, process and fugitive emissions, owned transport), N4.2 Scope 2 GHG emissions (grid electricity use), N4.3 Scope 2 reductions in GHG emissions through purchase of green electricity, N4.4 Scope 3 GHG emissions (other business travel, outsourced activities, grid electricity T&D), N4.5 Scope 3 reductions in GHG emissions through purchase of green electricity, N4.6 Scope 3 GHG emissions (embedded in capital spend), N4.7 Other offset GHG emissions from renewable energy export, N4.8 Other net GHG sequestered on YW land

Human capital themes	Human capital metrics
H1. Performance and Development	H1.1 Number of employees undergoing performance reviews, H1.2 Number employees recruited through internal promotions to management positions, H1.3 Average length of time commuting, H1.4 Wage inflation / deflation (magnitude of pay above / below inflation), H1.5 Staff turnover (voluntary leavers), H1.6 Number of new apprenticeships each year
H2. Health, Safety, and Wellbeing	H2.1 Lost days avoided through employee engagement, H2.2 Spend on health / wellbeing benefit programmes, H2.3 Number of injuries, H2.4 Workforce extent of unpaid / underpaid overtime, H2.5 Number of sick days
H3. Diversity and Inclusion	H3.1 Gender pay gap (mean hourly rate), H3.2 BAME pay gap (mean hourly rate), H3.3 LGBTQ pay gap (mean hourly rate), H3.4 Disability pay gap (mean hourly rate)
Intellectual capital themes	Intellectual capital metrics
I1. Research and Development	I1.1 Total spend on R&D
I2. Knowledge and Learning	I2.1 Total employee hours spent on training, I2.2 Number of computers, I2.3 Knowledge decay rate, I2.4 Number participants in educational programmes
I3. Processes and Efficiency	I3.1 Total spend on software, I3.2 Total spend on hardware, I3.3 Total spend on remote sensors, I3.4 Total spend on process management, I3.5 Total spend on transformation
Social capital themes	Social capital metrics
S1. Trust	S1.1 Late payments to suppliers, S1.2 Early payments to suppliers, S1.3 Customer trust in YW
S2. Health and Wellbeing	S2.1 Health benefits of providing a public water supply compared to a private supply, S2.2 Health benefits of recreational exercise on YW sites, S2.3 Volunteering time provided, S2.4 Amount raised for WaterAid
S3. Quality of Service	S3.1 Total amount of water delivered to customers, S3.2 Drinking water contacts, S3.3 Internal flooding incidents, S3.4 External flooding incidents, S3.5 Significant water supply events (>12 hours), S3.6 Number of properties below the low pressure threshold
S4. Vulnerability	S4.1 Number of customers YW provide financial support to, S4.2 Number of customers at risk that YW provide specialist support to

Timescales and trend indicators

The assessment covers each financial year over the five year period from 1 April 2015 to 31 March 2020. In order to show a general change in performance over this period for each metric, the difference between the average impact across 2016/17 to 2019/20 and the impact in 2015/16 was calculated, and this was then divided by the impact in 2015/16.

Trends were then defined as follows, assuming that outcomes are judged to be positive or negative based on the value they provide to Yorkshire and wider society as a whole:

- ↑ (+) = upward trend with positive outcome if average change is above 5% and impact is positive

- ↑ (-) = upward trend with negative outcome if average change is above 5% and impact is negative

- ↑ = upward trend with no clear outcome if average change is above 5% and impact is neutral

- ~ = broadly stable trend with stable outcome if average change is between +5 or -5%

- ↓ = downward trend with no clear outcome if average change is below -5% and impact is neutral

- ↓ (-) = downward trend with negative outcome if average change is below -5% and impact is negative

- ↓ (+) = downward trend with positive outcome if average change is below -5% and impact is positive

- ? = insufficient data to determine a trend

Note, all values are presented in terms of their respective price years i.e. value estimates for 2017/18 are presented in 2017 prices while for 2019/20 2019 prices are used. This is so that the results presented in this version of Our Contribution are consistent with the figures presented in the APR and ARFS, and with future versions. In light of this there is potential for some changes in value to be caused by inflation rather than real change but, in practice, the effects of inflation are considered to be minimal over the assessment period.

Robustness ratings

It is important to note that some of the approaches used are less well developed than others. In light of this, each metric is assigned a confidence score of low, medium, or high to reflect limitations around the accuracy of the underlying methodologies and/or data sources. This is defined below and follows the approach used in the original Our Contribution report and methodology.

Figure 5. Robustness ratings

Confidence ratings used to indicate the robustness of findings		
High	**Medium**	**Low**
Using robust data and widely respected techniques which have matured to become commonly used by respected organisations.	Using data with estimation and assumptions, and using techniques which have been used by early adopters but which are still maturing.	Using data with substantial extrapolation, estimation and assumptions, and using techniques which are at the early stages of development.

Independent assurance

Yorkshire Water's standard business processes include independent assurance of many of the metrics used in this assessment. These metrics are marked throughout this report. DNV GL provided further assurance of five priority metrics that are not already assured elsewhere. These are also marked throughout this report. A final section at the end of this report provides details and definitions for the specific metrics which have been independently assured by DNV GL. DNV GL's independent assurance report can be found at www.yorkshirewater.com/capitals.

Financial Capital

Financial capital account

Table 1. Financial capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Financial Assets										
Extent	Regulatory capital value (RCV)*^	£m	£5,833.0	£6,144.0	£6,446.3	£6,686.6	£6,950.5	High	↑ (+)	12%
Condition	Credit rating (Moody's CFR) ^	rating	Baa2	Baa2	Baa2	Baa2	Baa2	High	~	-
Condition	Gearing (Regulated Yorkshire Water)*^	%	76.7%	75.4%	74.3%	75.6%	76.9%	High	~	-1%
Investments										
Extent	Pension funds*	£m/yr	*Potential future metric to be explored*							
Condition	Share of pension funds invested ethically*	%	*Potential future metric to be explored*							
Debt										
Extent	Extent of debt*^	£m/yr	£4,572.0	£4,962.0	£4,901.0	£5,181.0	£5,605.0	High	↑ (-)	13%
Condition	Share of debt under sustainable bonds*	%	0.0%	0.0%	0.0%	1.9%	15.2%	High	↑ (+)	-

*Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Table 2. Financial capital impacts and values (i.e. physical and monetary flows accounts, note for financial capital there is a direct overlap)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Taxes*			£105.6	£105.5	£102.5	£112.0	£123.0	**High**	~	**5%**
External	Business rates^	£m/yr	£61.0	£60.6	£55.4	£58.0	£63.2	High	~	-3%

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
External	Carbon taxes^	£m/yr	£7.4	£6.9	£6.3	£7.1	£3.5	High	↓ (-)[2]	-20%
External	Fuel duty^	£m/yr	£1.2	£1.3	£1.5	£1.5	£2.0	High	↑ (+)	31%
External	Abstraction and discharge licenses^	£m/yr	£10.0	£10.1	£10.3	£12.3	£11.8	High	↑ (+)	11%
External	Employee PAYE contributions^	£m/yr	£12.9	£13.4	£14.4	£16.3	£18.1	High	↑ (+)	21%
External	VAT collected from business customers^	£m/yr	£13.1	£13.2	£14.6	£16.8	£24.4	High	↑ (+)	32%
External	Corporation tax^	£m/yr	£0.0	£0.0	£0.0	£0.0	£0.0	High	~	-
Salaries*			**£96.3**	**£108.0**	**£115.8**	**£128.0**	**£151.7**	**High**	**↑ (+)**	**31%**
External	Salaries^	£m/yr	£83.0	£91.9	£98.4	£108.5	£129.5	High	↑ (+)	29%
External	Employer NICs^	£m/yr	£7.2	£8.9	£9.6	£10.8	£12.3	High	↑ (+)	44%
External	Employee NICs^	£m/yr	£6.1	£7.2	£7.8	£8.7	£9.9	High	↑ (+)	38%
Pensions*			**£7.9**	**£9.2**	**£9.4**	**£9.7**	**£11.2**	**High**	**↑ (+)**	**25%**
External	Employer pension contributions^	£m/yr	£7.9	£9.2	£9.4	£9.7	£11.2	High	↑ (+)	25%
Profits*			**£248.7**	**£317.3**	**£273.0**	**£229.5**	**£212.4**	**High**	**~**	**4%**
Private	Operating profit (inc. exceptionals)^	£m/yr	£248.7	£317.3	£273.0	£229.5	£212.4	High	~	4%

*Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Methodology and data sources

FC1. Taxes

All data for this metric and the corresponding sub metrics (F1.1 Business rates, F1.2 Carbon taxes, F1.3 Fuel duty, F1.4 Abstraction and discharge licenses, F1.5 Employee's PAYE contributions, F1.6 VAT collected from business customers, and F1.7 Corporation tax) taken directly from the Yorkshire Water Annual

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[2] Taxes have been assigned a 'positive' outcome in light of the fact that they are a contribution that Yorkshire Water is paying to the UK Government which has benefits to the UK population. It is noted that the drop in carbon taxes has been assigned a 'negative' outcome on the basis that this means Yorkshire Water have made a smaller contribution to the UK Government. Any associated underlying reduction in GHG emissions is assessed independently in the Natural Capital Account.

Report and Financial Statements (ARFS) – no additional calculations undertaken.

FC2. Salaries

All data for this metric and the corresponding sub metrics (F2.1 Salaries, F2.2 Employer NICs, F2.3 Employee NICs) taken directly from the Yorkshire Water ARFS – no additional calculations undertaken.

FC3. Pensions

All data for this metric and the corresponding sub metrics (F3.1 Employer pension contributions) taken directly from the Yorkshire Water ARFS – no additional calculations undertaken.

FC4. Profits

All data for this metric and the corresponding sub metrics (F4.1 Operating profit (inc. exceptionals)) taken directly from the Yorkshire Water ARFS – no additional calculations undertaken.

Manufactured Capital

Manufactured capital account

Table 3. Manufactured capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Water Assets										
Extent	Water treatment works^	no.	54	49	48	48	48	High	↓	-11%
Extent	Total length of water mains*^	km	31,532	31,605	31,693	31,790	31,891	High	~	1%
Condition	Renovated, built, or relined water mains^	km	122	148	141	170	132	High	↑ (+)	21%
Condition	Renovated, built, or relined water mains*^	%	0.4%	0.5%	0.4%	0.5%	0.4%	High	↑ (+)	20%
Condition	Stability and reliability factor for water quality^	rating	Stable	Stable	Stable	Stable	Stable	High	~	-
Condition	Stability and reliability factor for water networks^	rating	Stable	Stable	Stable	Stable	Stable	High	~	-
Condition	Number of residential supply pipe repairs and renewals	no.	*Potential future metric to be explored*							
Condition	Total number of bursts	no.	*Potential future metric to be explored*							
Wastewater Assets										
Extent	Wastewater treatment works^	no.	638	619	611	610	608	High	~	-4%
Extent	Total length of sewers*^	km	52,180	52,229	52,263	52,292	52,315	High	~	0%
Condition	Renovated or replaced sewers^	km	21	20	23	29	29	High	↑ (+)	20%
Condition	Renovated or replaced sewers*^	%	0.04%	0.04%	0.04%	0.06%	0.06%	High	↑ (+)	20%
Condition	Stability and reliability factor for wastewater quality^	rating	Stable	Stable	Stable	Stable	Stable	High	~	-
Condition	Stability and reliability factor for wastewater networks^	rating	Stable	Stable	Stable	Stable	Stable	High	~	-

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Condition	Number of sewer collapses (per 1,000 km)	no.	*Potential future metric to be explored*							
Condition	Risk of sewer flooding in a storm	%	*Potential future metric to be explored*							
Condition	Surface water removed from the public sewer network	ha	*Potential future metric to be explored*							
Waste Assets										
Extent	Total waste produced*#	t/yr	4,050,820	5,595,909	5,462,486	7,289,346	7,040,712	Medium	↑ (-)	57%
Condition	Waste diverted from landfill*	%	99.01%	99.39%	99.40%	99.62%	99.61%	Medium	~	0%
Condition	Waste used for energy generation	t/yr	852	1,098	1,018	1,055	1,030	Medium	↑ (+)	23%
Condition	Biosolids achieving BAS accreditation	%	*Potential future metric to be explored*							
Energy Assets										
Extent	Total energy use (electricity and other)*^	kWh/yr	-	624,243	659,365	678,516	641,922	High	↑ (-)	6%
Condition	Total electricity consumed	kWh/yr	-	596,255	611,092	631,423	600,469	High	~	3%
Condition	- Total electricity purchased	kWh/yr	-	510,303	539,500	552,332	515,360	High	~	5%
Condition	- Electricity purchased from renewable sources	%/yr	0%	0%	0%	100%	100%	High	↑ (+)	-
Condition	- Total electricity generated (renewable)	kWh/yr	-	85,952	71,592	79,091	85,108	High	↓ (-)	-9%
Condition	- Electricity generated from renewable sources*^	%	11.3%	10.4%	11.4%	11.3%	15.0%	High	↑ (+)	6%
Condition	Other energy consumed (fuels, heat)	kWh/yr	-	27,988	48,274	47,094	41,453	High	↑ (-)	63%
Condition	- Total fuels consumed	kWh/yr	-	27,988	48,274	47,094	41,453	High	↑ (-)	63%
Condition	- Total heat consumed	kWh/yr	*Potential future metric to be explored*							
Condition	Energy intensity water	kWh/Ml	*Potential future metric to be explored*							
Condition	Energy intensity wastewater	kWh/Ml	*Potential future metric to be explored*							

*Selected as a KPI
#Metric assured by DNV GL
^Independently assured through Yorkshire Water's standard business processes

Table 4. Manufactured capital impacts (i.e. physical flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Asset Value										
Private	Value of change in fixed assets over the year (MEAV)*^	£m/yr	£761.1	£1,502.2	£1,654.5	£1,248.0	£1,389.1	High	↑ (+)	90%
Waste Use and Reuse										
Private	Waste going to landfill*	t/yr	39,914	33,818	32,884	27,301	27,162	Medium	↓ (+)	-24%
Private	Amount of waste used productively	t/yr	*Potential future metric to be explored*							
Renewable Energy*			120,764	108,963	126,111	132,272	166,326	**High**	↑ (+)	**10%**
Private	Amount of renewable energy generated and used	MWh/yr	118,784	108,238	124,831	131,858	165,342	High	↑ (+)	12%
External	Amount of renewable energy generated and exported	MWh/yr	1,980	724	1,280	414	984	High	↓ (-)	-57%

Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Table 5. Manufactured capital values (i.e. monetary flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Asset Value*			**£761.1**	**£1,502.2**	**£1,654.5**	**£1,248.0**	**£1,389.1**	**High**	↑ (+)	**90%**
Private	Value of change in fixed assets over the year (MEAV)*^	£m/yr	£761.1	£1,502.2	£1,654.5	£1,248.0	£1,389.1	High	↑ (+)	90%
Waste Use and Reuse*			**-£7.0**	**-£7.8**	**-£6.9**	**-£8.7**	**-£6.6**	**Medium**	↓ (-)	**-7%**
Private	Value of waste disposal	£m/yr	-£7.0	-£7.8	-£6.9	-£8.7	-£6.6	Medium	↓ (-)	-7%
Private	Value created from underused resources	£m/yr	*Potential future metric to be explored*							
Renewable Energy*			**£10.7**	**£8.2**	**£10.5**	**£9.7**	**£12.9**	**Medium**	~	**-3%**
Private	Value from renewable electricity generated and used	£m/yr	£7.8	£7.2	£8.5	£9.1	£11.4	Medium	↑ (+)	15%
External	Value of grid resilience through renewables exported	£m/yr	£2.8	£1.1	£1.9	£0.6	£1.5	Medium	↓ (-)	-55%

Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Methodology and data sources

M1. Asset Value

M1.1 Change in the value of fixed assets over the year (MEAV)

Calculation of the Modern Equivalent Asset Value (MEAV) was undertaken by Yorkshire Water staff based on figures from the Annual Performance Report (APR) rather than the AFRS. This calculation therefore excludes non-appointed assets (not a material value) and capitalised interest which is required by Ofwat to be excluded from regulatory reporting.

M2. Waste Use and Reuse

M2.1 Waste going to landfill

Table 6. Methodology for calculating the waste going to landfill

Input	Data	Unit	Source
A.	Waste going to landfill	t/yr	Data collected within Yorkshire Water and its suppliers on waste production and disposal, collated in a central spreadsheet
B.	Private cost of waste disposal	£/yr	As above
C.	Private benefit of waste disposal	£/yr	As above
Physical flows	**Calculations**		
1.	*Total waste = A*		
Monetary flows	**Calculations**		
1.	*Net cost of waste = B + C*[3]		

M2.2 Amount of waste used productively

Metric not calculated in this version of the accounts but could be explored in future.

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[3] Note, that in this formula 'B' is a negative impact i.e. the private cost of waste disposal.

M3. Renewable Energy

M3.1 Amount of renewable energy generated and used

Table 7. Methodology for calculating the amount of renewable energy generated and used

Input	Data	Unit	Source
A.	Total renewable electricity generated and used onsite (from sludge processing)	kWh/yr	Data collected within Yorkshire Water and its suppliers, collated in its Carbon Accounting Workbook which is provided and annually updated by UKWIR
B.	Total renewable electricity generated and used onsite (from other sources than sludge)	kWh/yr	As above
C.	Total energy generated from sludge processing (both used onsite and exported)-heat	kWh/yr	As above
D.	Conversion factor for kWh to MWh (i.e. 0.001)	-	-
E.	Energy efficiency conversion factor from heat to gas (i.e. 1.18)	-	Yorkshire Water (2018) TIVA - Methodology Report - based on Yorkshire Water's previous experience
F.	Average unit cost of gas for 'large' nondomestic consumer (i.e. £0.02244 in 2014 prices)	£/kWh	Yorkshire Water (2018) TIVA - Methodology Report – based on BEIS quarterly gas and electricity prices for non-domestic sector
G.	Average price paid by Yorkshire Water for grid electricity (i.e. £ 0.098 in 2014 prices)	£/kWh	Yorkshire Water (2018) TIVA - Methodology Report – based on total cost of electricity purchased / volume of electricity purchased from Yorkshire Water accounts
Physical flows	**Calculations**		
1.	*Total energy generated and used in kWh = A + B + C*		
2.	*Total energy generated and used in MWh = 1 * D*		
Monetary flows	**Calculations**		
3.	*Value of heat energy generated and used = C * E * F*		
4.	*Value of electricity generated and used = (A + B) * G*		
5.	*Total value = 3 + 4*		

M3.2 Amount of renewable energy generated and exported

Table 8. Methodology for calculating the amount of renewable energy generated and exported

Input	Data	Unit	Source
A.	Total renewable electricity generated onsite and exported (from sludge processing)	kWh/yr	Data collected within Yorkshire Water and its suppliers, collated in its Carbon Accounting Workbook which is provided and annually updated by UKWIR
B.	Total renewable electricity generated onsite and exported (from other sources than sludge)	kWh/yr	As above
C.	Conversion factor for kWh to MWh (i.e. 0.001)	-	-
D.	Market value of security of electricity supply (i.e. £1.43 in 2014 prices)	£/kWh	Yorkshire Water (2018) TIVA - Methodology Report – based on research published in 2013 by London Economics for Ofgem and DECC which estimated the Value of Lost Load (VoLL) for consumers in Great Britain
Physical flows	**Calculations**		
1.	*Total energy generated and exported in kWh = A + B*		
2.	*Total energy generated and exported in MWh = 1 * C*		
Monetary flows	**Calculations**		
3.	*Value of grid resilience through renewables exported = 1 * D*		

Natural Capital

Natural capital account

Table 9. Natural capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Land										
Extent	Total area of land*	ha	27,577	27,577	27,577	27,577	27,577	Medium	~	0%
Extent	- Acid grassland	ha	2,542	2,561	2,580	2,599	2,619	Medium	~	2%
Extent	- Arable and horticulture	ha	476	460	444	428	412	Medium	↓	-8%
Extent	- Bog	ha	9,202	9,096	8,990	8,883	8,777	Medium	~	-3%
Extent	- Calcareous grassland	ha	349	323	298	273	248	Medium	↓ (-)	-18%
Extent	- Coniferous woodland	ha	1,023	1,001	979	956	934	Medium	↓	-5%
Extent	- Deciduous woodland	ha	1,414	1,509	1,604	1,700	1,795	Medium	↑ (+)	17%
Extent	- Fen, marsh and swamp	ha	5	4	3	2	0	Medium	↓ (-)	-55%
Extent	- Freshwater	ha	2,411	2,353	2,294	2,236	2,177	Medium	↓ (-)	-6%
Extent	- Heather	ha	3,121	2,887	2,654	2,421	2,188	Medium	↓ (-)	-19%
Extent	- Heather grassland	ha	2,333	2,802	3,271	3,740	4,209	Medium	↑ (+)	50%
Extent	- Improved grassland	ha	4,026	3,891	3,756	3,621	3,486	Medium	↓	-8%
Extent	- Inland rock	ha	22	25	28	31	34	Medium	↑	34%
Extent	- Littoral rock	ha	1	1	1	1	1	Medium	~	0%
Extent	- Littoral sediment	ha	1	1	1	1	1	Medium	~	0%

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Extent	- Neutral grassland	ha	89	80	71	63	54	Medium	↓ (-)	-25%
Extent	- Saltmarsh	ha	4	4	5	5	6	Medium	↑ (+)	25%
Extent	- Saltwater	ha	0	1	1	1	1	Medium	~	-
Extent	- Suburban	ha	293	299	304	310	315	Medium	~	5%
Extent	- Supralittoral sediment	ha	1	1	1	1	0	Medium	↓ (-)	-25%
Extent	- Urban	ha	275	289	303	317	331	Medium	↑	13%
Extent	Number of biodiversity units[#]	no.	352,034	352,678	353,322	353,966	354,610	Low	~	0%
Condition	Total area of land under active agricultural use	ha	20,190	20,000	19,775	19,775	19,775	High	~	-2%
Condition	Total area of agricultural land under Beyond Nature	ha	0	904	2,727	3,707	4,821	High	↑ (+)	-
Condition	Total area of land conserved or enhanced^	ha	11,466	11,492	11,479	11,524	11,806	High	~	1%
Condition	SSSIs in 'favourable' condition*	%	2.67%	4.01%	4.01%	4.01%	4.01%	High	↑ (+)	50%
Condition	SSSIs in 'unfavourable recovering' condition	%	95.98%	95.96%	95.96%	95.96%	95.96%	High	~	0%
Condition	SSSIs in 'unfavourable no change' condition	%	0.00%	0.00%	0.00%	0.00%	0.00%	High	~	-
Condition	SSSIs in 'unfavourable declining' condition	%	0.35%	0.03%	0.03%	0.03%	0.03%	High	↓ (+)	-91%
Condition	Total standing timber volume	m3	495,527	506,059	516,592	527,124	537,656	Medium	↑ (+)	5%
Condition	Av. no. species per site in the BBS[4] in Yorkshire	no.	0.49	0.49	0.50	0.48	-	Medium	~	0%
Condition	Av. no. individuals per site in the BBS in Yorkshire	no.	197	196	196	191	-	Medium	~	-1%
Condition	Total area of land affected by INNS	ha	*Potential future metric to be explored*							
Condition	Proportion of land affected by INNS that has been treated	%	*Potential future metric to be explored*							
Condition	Number of pathways of biosecurity implementation	no.	*Potential future metric to be explored*							
Abstracted Water										

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[4] Breeding Bird Survey https://www.bto.org/our-science/projects/bbs

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Extent	Number of reservoirs*^	no.	-	-	133	130	129	High	~	-3%
Extent	Number of water abstraction points^	no.	-	-	9	9	16	High	↑	39%
Extent	Number of boreholes^	no.	-	-	45	40	40	High	↓	-11%
Condition	Reservoir levels (minimum)	%	58%	66%	71%	44%	78%	High	↑ (+)	12%
Condition	Reservoir levels (average)	%	84%	83%	86%	71%	91%	High	~	-1%
Condition	Long term average rainfall	%	139%	93%	107%	86%	131%	High	↓ (-)	-25%
Condition	Average water consumption per head of population*^	l/h/d	141.7	137.4	135.9	133.5	135.0	High	~	-4%
Condition	Average daily leakage^	Ml/d	285.1	295.2	300.3	289.8	270.8	High	~	1%
Condition	Average daily water recycled	Ml/d	*Potential future metric to be explored*							
Environmental Water										
Extent	Length of rivers	km	6,338	6,338	6,338	6,338	6,338	High	~	0%
Condition	River water quality	-	*Potential future metric to be explored*							
Extent	Number of bathing waters*^	no.	20	19	19	19	19	High	↓	-5%
Condition	No. bathing waters exceed the minimum legal standard^	no.	18	17	18	17	16	High	↓ (-)	-6%
Condition	% bathing waters exceed the minimum legal standard*^	%	90%	89%	95%	89%	84%	High	~	-1%
Condition	Number of bathing waters in 'excellent' condition^	no.	10	11	5	5	8	High	↓ (-)	-28%
Condition	Number of bathing waters in 'good' condition^	no.	8	6	13	12	8	High	↑ (+)	22%
Condition	Number of bathing waters in 'sufficient' condition^	no.	1	1	0	1	1	High	↓	-25%
Condition	Number of bathing waters in 'poor' condition^	no.	1	1	1	1	1	High	~	0%
Condition	Number of bathing waters unassessed^	no.	0	0	0	0	1	High	↑ (-)	-
Condition	EA environmental performance rating^	4 stars	-	-	3	2	3	High	~	-
Condition	Number of sites actively managed for flood mitigation	no.	*Potential future metric to be explored*							
Condition	Prop. of catchments in integrated catchment management	%	*Potential future metric to be explored*							

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Condition	Number of WINEP requirements	no.	*Potential future metric to be explored*							
Condition	Treatment works compliance^	%	99.1%	97.2%	97.8%	97.5%	97.5%	High	~	-2%
Air										
Extent	Total carbon stock from YW emissions over lifetime*	kt/CO2e	*Potential future metric to be explored*							
Extent	Total carbon stock in land assets	kt/CO2e	-	-	-	-	13,420	Medium	?	-
Condition	GHG emissions per million litres of water served*^	kg/CO2e/Ml	282	263	225	206	173	High	↓ (+)	-23%
Condition	GHG emissions per million litres of wastewater treated^	kg/CO2e/Ml	265	218	235	219	136	High	↓ (+)	-24%

*Selected as a KPI
#Metric assured by DNV GL
^Independently assured through Yorkshire Water's standard business processes

Table 10. Natural capital impacts (i.e. physical flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Water Use and Efficiency										
Private	Total water abstraction*	Ml/yr	452,591	451,317	455,869	463,750	445,978	High	~	0%
External	Total amount of water returned to the environment	Ml/yr	*Potential future metric to be explored*							
External	Total leakage*^	Ml/yr	104,062	108,043	110,705	105,777	99,113	High	~	2%
External	Total water saved through water saving support	Ml/yr	650	734	533	321	354	Medium	↓ (-)	-25%
External	Total water recycled	Ml/yr	*Potential future metric to be explored*							
Water Quality										
External	Net change in bathing water status classifications	no./yr	0	1	-5	-1	3	High	↓ (-)	-
External	Length of river water improved*^	km/yr	-	-	-	40	459	High	↑ (+)	-
External	Number of pollution incidents*^	no./yr	185	211	205	199	166	High	↑ (-)	6%

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
External	- No. Category 1&2 pollution incidents^	no./yr	5	4	3	11	7	High	↑ (-)	25%
External	- No. Category 3 pollution incidents^	no./yr	180	207	202	188	159	High	~	5%
Private	Area of wetland habitat providing water quality	ha/yr	9,085	9,100	8,993	8,866	8,779	Low	~	-2%
Land, Soil, and Biodiversity										
Private	Number of farm tenancies	no./yr	263	259	254	249	245	High	~	-4%
Private	Amount of timber harvested	t/yr	1,204	153	2,606	6,254	12,608	High	↑ (+)	349%
External	Atmospheric pollutants emitted from YW operations	t/yr	*Potential future metric to be explored*							
External	Atmospheric pollutants filtered on YW land	t/yr	*Potential future metric to be explored*							
External	Area of wetland habitat providing flood regulation	ha/yr	9,085	9,100	8,993	8,866	8,779	Low	~	-2%
External	Area of grassland habitat supporting pollinators	ha/yr	5,238	5,763	6,217	6,671	7,125	Low	↑ (+)	23%
External	Number of visitors to YW sites	no./yr	-	-	-	-	2,642,148	Low	?	-
External	No. houses benefitting from proximity to YW land	no./yr	39,474	39,474	39,474	39,474	39,474	Low	~	0%
External	Net change in biodiversity units*	no./yr	-	644	644	644	644	Low	~	0%
Carbon*			**441,624**	**439,101**	**438,110**	**264,272**	**244,624**	**High**	↓ (+)	**-22%**
External	Scope 1 GHG^	t/CO$_2$e/yr	84,477	64,822	74,660	77,553	72,470	High	↓ (+)	-14%
External	Scope 2 GHG^	t/CO$_2$e/yr	240,642	210,765	186,487	156,362	131,724	High	↓ (+)	-29%
External	Scope 2 reductions from purchasing green electricity^	t/CO$_2$e/yr	0	0	0	-156,362	-131,724	High	↓ (+)	-
External	Scope 3 GHG (various priority aspects)^	t/CO$_2$e/yr	28,884	31,207	27,753	24,978	23,232	High	↓ (+)	-7%
External	Scope 3 reductions from purchasing green electricity^	t/CO$_2$e/yr	0	0	0	-13,329	-11,183	High	↓ (+)	-
External	Scope 3 GHG (embedded in capital spend)	t/CO$_2$e/yr	88,515	132,510	149,345	175,070	169,820	Medium	↑ (-)	77%
External	Other offset GHG from renewable energy export	t/CO$_2$e/yr	-894	-203	-135	0	-5	High	↑ (-)	90%
External	Other net GHG sequestered on YW land	t/CO$_2$e/yr	-	-	-	-	-9,710	Medium	?	-

*Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Table 11. Natural capital values (i.e. monetary flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Water Use and Efficiency*			**£121.4**	**£126.6**	**£121.7**	**£136.7**	**£140.5**	**Medium**	**↑ (+)**	**8%**
External	Value of water abstraction	£m/yr	£173.2	£180.8	£178.2	£192.6	£193.7	Medium	↑ (+)	8%
External	Value of water returned to the environment	£m/yr	*Potential future metric to be explored*							
External	Value of leakage	£m/yr	-£52.1	-£54.6	-£56.8	-£56.1	-£53.4	Medium	↓ (-)	-6%
External	Value of water saving support measures	£m/yr	£0.3	£0.4	£0.3	£0.2	£0.2	Medium	↓ (-)	-8%
External	Value of total water recycled	£m/yr	*Potential future metric to be explored*							
Water Quality*			**-£28.5**	**-£30.5**	**-£37.4**	**-£33.7**	**£28.3**	**High**	**↑ (+)**	**36%**
External	Value of change in bathing water classifications	£m/yr	£0.0	£1.3	-£6.6	-£1.4	£4.1	High	↓ (-)	-
External	Value of change in river water quality	£m/yr	-	-	-	£4.5	£53.3	High	↑ (+)	-
External	Value of pollution incidents	£m/yr	-£30.8	-£34.1	-£33.2	-£39.2	-£31.5	High	↓ (-)	-12%
External	- Value of Cat 1&2 pollution incidents	£m/yr	-£4.7	-£3.8	-£2.8	-£10.3	-£6.6	High	↓ (-)	-25%
External	- Value of Cat 3 pollution incidents	£m/yr	-£26.1	-£30.3	-£30.4	-£28.9	-£24.9	High	↓ (-)	-10%
Private	Value of water pollutants filtered by wetland habitats	£m/yr	£2.3	£2.3	£2.4	£2.4	£2.4	Low	~	3%
Land, Soil, and Biodiversity*			**£15.3**	**£21.8**	**£22.3**	**£22.9**	**£29.2**	**Low**	**↑ (+)**	**57%**
Private	Value or rental income from farm tenancies	£m/yr	£0.5	£0.5	£0.5	£0.5	£0.5	High	~	0%
Private	Value of timber harvested	£m/yr	£0.1	£0.0	£0.2	£0.5	£1.1	Medium	↑ (+)	350%
External	Value of air pollutant emissions	£m/yr	*Potential future metric to be explored*							
External	Value of air pollutant filtration on YW land	£m/yr	*Potential future metric to be explored*							
External	Value of flood water slowed by wetland habitats	£m/yr	£3.2	£3.2	£3.3	£3.3	£3.3	Low	~	2%
External	Value of pollinators supported on YW land	£m/yr	£0.4	£0.5	£0.5	£0.6	£0.6	Low	↑ (+)	38%
External	Value to visitors of recreation on YW sites	£m/yr	-	-	-	-	£5.8	Medium	?	-
External	Value of proximity to habitats to house prices	£m/yr	£11.1	£10.9	£10.9	£10.9	£10.7	Low	~	-2%

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
External	Value of change in biodiversity units	£m/yr	-	£6.7	£6.9	£7.1	£7.2	Low	↑ (+)	5%
Carbon*			**-£118.0**	**-£118.5**	**-£121.3**	**-£74.9**	**-£70.5**	**Medium**	↑ (+)	**18%**
External	Value of Scope 1 GHG emissions	£m/yr	-£22.6	-£17.5	-£20.7	-£22.0	-£20.9	Medium	↑ (+)	10%
External	Value of Scope 2 GHG emissions	£m/yr	-£64.3	-£56.9	-£51.6	-£44.3	-£37.9	Medium	↑ (+)	26%
External	Value of Scope 2 reductions in GHG emissions	£m/yr	£0.0	£0.0	£0.0	£44.3	£37.9	Medium	↑ (+)	-
External	Value of Scope 3 GHG emissions	£m/yr	-£7.7	-£8.4	-£7.7	-£7.1	-£6.7	Medium	~	3%
External	Value of Scope 3 reductions in GHG emissions	£m/yr	£0.0	£0.0	£0.0	£3.8	£3.2	Medium	↑ (+)	-
External	Value of Scope 3 GHG emissions	£m/yr	-£23.6	-£35.8	-£41.3	-£49.6	-£48.9	Medium	↓ (-)	-86%
External	Value of other offset GHG emissions	£m/yr	£0.2	£0.1	£0.0	£0.0	£0.0	Medium	↓ (-)	-88%
External	Value of other net GHG emissions sequestered	£m/yr	-	-	-	-	£2.8	Medium	?	-

*Selected as a KPI

^Independently assured through Yorkshire Water's standard business processes

Methodology and data sources

N1. Water Use and Efficiency

N1.1 Total water abstraction

Table 12. Methodology for calculating total water abstraction

Input	Data	Unit	Source
A.	Total water abstraction	Ml/yr	Internal data provided by Yorkshire Water
B.	Gross value of water abstracted (Total wholesale charge – water)	£/yr	Yorkshire Water APR
C.	Environmental cost per unit abstracted (proxied by value per Ml lost through leakage)	£/yr	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		

Input	Data	Unit	Source
1.	*Total amount abstracted = A*		
Monetary flows	**Calculations**		
2.	*Gross value of water abstracted per Ml = B / A*		
3.	*Net value of water abstracted per Ml = 2 + C*		
4.	*Net value of water abstracted = 1 * 3*		

N1.2 Total amount of water returned to the environment to maintain flows for wildlife and other users

Not included in this version of the accounts.

N1.3 Total leakage

Table 13. Methodology for calculating total leakage

Input	Data	Unit	Source
A.	Average daily leakage	Ml/day	Yorkshire Water ARFS
B.	Number of days per year	no./yr	-
C.	Cost to customers per Ml lost through leakage	£/Ml	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Total annual leakage = A * B*		
Monetary flows	**Calculations**		
2.	*Total cost of leakage = C * 1*		

N1.3 Total water saved through water saving support measures

Table 14. Methodology for calculating total water saved through water saving support measures

Input	Data	Unit	Source
A.	Total water savings delivered	Ml/yr	Internal data provided by Yorkshire Water
B.	Benefit to customers per Ml saved (proxied through inverse of leakage costs)	£/Ml	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Total annual water savings = A*		
Monetary flows	**Calculations**		
2.	*Total benefit of water savings = B * 1*		

N1.4 Total water recycled

Not included in this version of the accounts.

N2. Water Quality

N2.1 Net change in bathing water status classifications

Table 15. Methodology for calculating net change in bathing water status classifications

Input	Data	Unit	Source
A.	Number of bathing waters increasing in quality relative to the previous year	no./yr	Yorkshire Water ARFS
B.	Number of bathing waters decreasing in quality relative to the previous year	no./yr	Yorkshire Water ARFS
C.	Value to customers of an increase in bathing water quality (i.e. £1,324,017 in 2017 prices)	£/change in status category	Yorkshire Water Service Measure Framework
D.	Cost to customers of a decrease in bathing water quality (i.e. -£1,324,017 in 2017 prices)	£/change in status category	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Net change in bathing water status classifications = A – B*		

Monetary flows	Calculations
2.	*Net change in value = (A * C) + (B * D)*

N2.2 Length of river water improved

Table 16. Methodology for calculating the length of river water improved

Input	Data	Unit	Source
A.	Length of river water improved	km	Internal data provided by Yorkshire Water
B.	Value to customers of improvements in river water quality (i.e. £111,643 in 2017 prices)	£/km	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Total length improved = A*		
Monetary flows	**Calculations**		
2.	*Value of the change in river water quality = A * B*		

N2.3 Number of pollution incidents

Table 17. Methodology for calculating the number of pollution incidents

Input	Data	Unit	Source
A.	Number of Category 1&2 pollution events	no./yr	Yorkshire Water ARFS
B.	Number of Category 3 pollution events	no./yr	Yorkshire Water ARFS
C.	Cost to customers per Category 1&2 pollution event (i.e. £937,545 in 2017 prices)	£/km	Yorkshire Water Service Measure Framework
D.	Cost to customers per Category 3 pollution event (i.e. £150,285 in 2017 prices)	£/km	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Total pollution incidents = A + B*		
Monetary flows	**Calculations**		
2.	*Total cost = (A *C) + (B *D)*		

N2.4 Area of wetland habitat providing water quality regulation

Table 18. Methodology for calculating the area of wetland habitat providing water quality regulation

Input	Data	Unit	Source
A.	Total area of inland wetland	ha/yr	CEH Land Cover Map 2015 and 2019
B.	Total area of coastal wetland	ha/yr	CEH Land Cover Map
C.	SSSIs in 'favourable' condition	%/yr	Internal data provided by Yorkshire Water
D.	SSSIs in 'unfavourable recovering' condition	%/yr	Internal data provided by Yorkshire Water
E.	Value of water quality regulation provided by inland wetland (i.e. £436 in 2010 prices)	£/ha	Defra ENCA workbook
F.	Value of water quality regulation provided by coastal wetland (i.e. £2,676 in 2010 prices)	£/ha	Defra ENCA workbook
G.	Proportion of ecosystem value provided by habitat in good condition (i.e. 100%)	%	Assumption made that habitats in good condition provide 100% of the total service value
H.	Proportion of ecosystem value provided by habitat in moderate condition (i.e. 50%)	%	Assumption made that habitats in moderate condition provide 50% of the total service value
Physical flows	**Calculations**		
1.	*Total area of inland wetland in good condition (assuming 'favourable' = 'good') = A * C*		
2.	*Total area of inland wetland in moderate condition (assuming 'unfavourable recovering' = 'moderate') = A * D*		
3.	*Total area of coastal wetland in good condition = B * C*		
4.	*Total area of coastal wetland in moderate condition = B * D*		
5.	*Total area of wetland in a condition that is able to provide water quality regulation (i.e. moderate or good) = 1 + 2 + 3 + 4*		
Monetary flows	**Calculations**		
6.	*Total value of water quality regulation provided by inland wetlands = (1 * E * G) + (2 * E * H)*		
7.	*Total value of water quality regulation provided by coastal wetlands = (3 * F * G) + (4 * F * H)*		
8.	*Total value of water quality regulation = 6 + 7*		

N3. Land, Soil, and Biodiversity

N3.1 Number of farm tenancies

Table 19. Methodology for calculating the number of farm tenancies

Input	Data	Unit	Source
A.	Number of farm tenancies	no./yr	Internal data provided by Yorkshire Water
B.	Rental income from farm tenancies	£/yr	Internal data provided by Yorkshire Water
Physical flows	**Calculations**		
1.	*Number of farm tenancies = A*		
Monetary flows	**Calculations**		
2.	*Rental income from farm tenancies = B*		

N3.2 Amount of timber harvested

Table 20. Methodology for calculating the amount of timber harvested

Input	Data	Unit	Source
A.	Amount of timber harvested	t/yr	Internal data provided by Yorkshire Water
B.	Average conversion factor for different types of woods (i.e. 1.46)	m3/t	Forest Research Conversion Factors
C.	Average softwood saw log price (i.e. £34.03 - £56.84 in 2016 prices)	£/m3	Forest Research Timber Price Indices
Physical flows	**Calculations**		
1.	*Amount of timber harvested = A*		
Monetary flows	**Calculations**		
2.	*Value of timber harvest = A * B * C*		

N3.3 Atmospheric pollutants emitted from YW operations

Not included in this version of the accounts.

N3.4 Atmospheric pollutants filtered on YW land

Not included in this version of the accounts.

N3.5 Area of wetland habitat providing flood regulation

Table 21. Methodology for calculating the area of wetland habitat providing flood regulation

Input	Data	Unit	Source
A.	Total area of inland wetland	ha/yr	CEH Land Cover Map 2015 and 2019
B.	Total area of coastal wetland	ha/yr	CEH Land Cover Map 2015 and 2019
C.	SSSIs in 'favourable' condition	%/yr	Internal data provided by Yorkshire Water
D.	SSSIs in 'unfavourable recovering' condition	%/yr	Internal data provided by Yorkshire Water
E.	Value of flood regulation provided by inland wetland (i.e. £608 in 2010 prices)	£/ha	Defra ENCA workbook
F.	Value of flood regulation provided by coastal wetland (i.e. £3,730 in 2010 prices)	£/ha	Defra ENCA workbook
G.	Proportion of ecosystem value provided by habitat in good condition (i.e. 100%)	%	Assumption made that habitats in good condition provide 100% of the total service value
H.	Proportion of ecosystem value provided by habitat in moderate condition (i.e. 50%)	%	Assumption made that habitats in moderate condition provide 50% of the total service value
Physical flows	**Calculations**		
1.	*Total area of inland wetland in good condition (assuming 'favourable' = 'good') = A * C*		
2.	*Total area of inland wetland in moderate condition (assuming 'unfavourable recovering' = 'moderate') = A * D*		
3.	*Total area of coastal wetland in good condition = B * C*		
4.	*Total area of coastal wetland in moderate condition = B * D*		
5.	*Total area of wetland in a condition that is able to provide flood regulation (i.e. moderate or good) = 1 + 2 + 3 + 4*		
Monetary flows	**Calculations**		
6.	*Total value of flood regulation provided by inland wetlands = (1 * E * G) + (2 * E * H)*		
7.	*Total value of flood regulation provided by coastal wetlands = (3 * F * G) + (4 * F * H)*		
8.	*Total value of flood regulation = 6 + 7*		

N3.6 Area of grassland habitat supporting pollinators

Table 22. Methodology for calculating the area of grassland habitat supporting pollinators

Input	Data	Unit	Source
A.	Total area of grassland habitat	ha/yr	CEH Land Cover Map 2015 and 2019
B.	SSSIs in 'favourable' condition	%/yr	Internal data provided by Yorkshire Water
C.	SSSIs in 'unfavourable recovering' condition	%/yr	Internal data provided by Yorkshire Water
D.	Value of pollination provided by grassland (i.e. £167 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
E.	Proportion of ecosystem value provided by habitat in good condition (i.e. 100%)	%	Assumption made that habitats in good condition provide 100% of the total service value
F.	Proportion of ecosystem value provided by habitat in moderate condition (i.e. 50%)	%	Assumption made that habitats in moderate condition provide 50% of the total service value
Physical flows	**Calculations**		
1.	*Total area of grassland in good condition (assuming 'favourable' = 'good') = A * B*		
2.	*Total area of grassland in moderate condition (assuming 'unfavourable recovering' = 'moderate') = A * C*		
3.	*Total area of grassland in a condition that is able to provide pollination services (i.e. moderate or good) = 1 + 2*		
Monetary flows	**Calculations**		
4.	*Total value of pollination provided by grassland = (1 * D * E) + (2 * D * F)*		

N3.7 Number of visitors to YW sites

Table 23. Methodology for calculating the number of visitors to YW sites

Input	Data	Unit	Source
A.	Number of visitors per year (i.e. 2.6 million)	no./yr	Internal calculation for YW based on the ORVal tool
B.	Average WTP for a recreational trip to a water habitat (i.e. £1.82 in 2010 prices)	£/trip	Defra ENCA workbook
Physical flows	**Calculations**		
1.	*Total number of visitors per year = A*		

Monetary flows	Calculations
2.	*Total value = A * B*

N3.8 Number of houses benefitting from proximity to habitats on YW land

Table 24. Methodology for calculating the number of houses benefitting from proximity to habitats on YW land

Input	Data	Unit	Source
A.	Area of coniferous woodland	ha/yr	CEH Land Cover Map 2015 and 2019
B.	Area of broadleaved woodland	ha/yr	CEH Land Cover Map 2015 and 2019
C.	Area of semi-natural grassland	ha/yr	CEH Land Cover Map 2015 and 2019
D.	Area of farmland	ha/yr	CEH Land Cover Map 2015 and 2019
E.	Area of wetlands and floodplains	ha/yr	CEH Land Cover Map 2015 and 2019
F.	Area of mountains, moors, and heaths	ha/yr	CEH Land Cover Map 2015 and 2019
G.	Area of coastal margins	ha/yr	CEH Land Cover Map 2015 and 2019
H.	Area of greenspace	ha/yr	CEH Land Cover Map 2015 and 2019
I.	Average housing density in Yorkshire	hh/ha	Yorkshire Water Service Measure Framework
J.	Value of coniferous woodland (i.e. £1,004 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
K.	Value of broadleaved woodland (i.e. £1,590 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
L.	Value of semi-natural grassland (i.e. -£84 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
M.	Value of farmland (i.e. £502 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
N.	Value of wetlands and floodplains (i.e. £3,012 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
O.	Value of mountains, moors, and heaths (i.e. £669 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
P.	Value of coastal margins (i.e. £335 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
Q.	Value of greenspace (i.e. £8,700 in 2017 prices)	£/ha	Yorkshire Water Service Measure Framework
Physical flows	**Calculations**		
1.	*Total area of natural habitat on YW estate = A + B + C + D + E + F + G + H*		

Input	Data	Unit	Source
2.	*Number houses benefitting from proximity to habitat = I / 1*		
Monetary flows	**Calculations**		
3.	*Total value = SUMPRODUCT (A:H,J:Q)*		

N3.9 Net change in biodiversity units

Table 25. Methodology for calculating the net change in biodiversity units

Input	Data	Unit	Source
A.	Area of habitat types	ha/yr	CEH Land Cover Map 2015 and 2019
B.	Number of biodiversity units (assuming all condition indicators average)	units/yr	Defra Metric 2.0
C.	Value per biodiversity unit (i.e. £11,000 in 2018 prices)	£/unit	Environment Analyst (2019) 'Full costs of biodiversity net gain revealed' https://environment-analyst.com/global/83704/full-costs-of-biodiversity-net-gain-revealed#:~:text=Defra%20has%20reported%20that%20the,m%20in%20the%20first%20year.
Physical flows	**Calculations**		
1.	*Total number of biodiversity units in Year 1 = B_1*		
2.	*Total number of biodiversity units in Year 2 = B_2*		
3.	*Net change in the number of biodiversity units = 2 – 1*		
Monetary flows	**Calculations**		
4.	*Total value each year = 3 * C*		

N4. Carbon

N4.1 Scope 1 GHG emissions (burning fuel, process and fugitive emissions, owned transport)

Table 26. Methodology for calculating the Scope 1 GHG emissions (burning fuel, process and fugitive emissions, owned transport)

Input	Data	Unit	Source
A.	Direct emissions from burning of fossil fuels (including CHP generated onsite)	$t/CO_2e/yr$	Yorkshire Water Carbon Accounting Workbook
B.	Process and fugitive emissions	$t/CO_2e/yr$	Yorkshire Water Carbon Accounting Workbook
C.	Transport: Company owned or leased vehicles	$t/CO_2e/yr$	Yorkshire Water Carbon Accounting Workbook
D.	Social cost of carbon (i.e. £288 in 2019 prices)	$£/tCO_2e$	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 1 emissions = A + B + C*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * D*		

N4.2 Scope 2 GHG emissions (grid electricity use)

Table 27. Methodology for calculating the Scope 2 GHG emissions (grid electricity use)

Input	Data	Unit	Source
A.	Total grid electricity used by company (including CHP electricity purchased)	$t/CO_2e/yr$	Yorkshire Water Carbon Accounting Workbook
B.	Social cost of carbon (i.e. £288 in 2019 prices)	$£/tCO_2e$	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 2 emissions = A*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * B*		

N4.3 Scope 2 reductions in GHG emissions through purchase of green electricity

Table 28. Methodology for calculating the Scope 2 reductions in GHG emissions through purchase of green electricity

Input	Data	Unit	Source
A.	Total grid electricity used by company (including CHP electricity purchased)	t/CO_2e/yr	Yorkshire Water Carbon Accounting Workbook
B.	% purchase of green electricity	%	Internal data provided by Yorkshire Water
C.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO_2e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 2 emissions reductions = A * B*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * C*		

N4.4 Scope 3 GHG emissions (other business travel, outsourced activities, grid electricity T&D)

Table 29. Methodology for calculating the Scope 3 GHG emissions (other business travel, outsourced activities, grid electricity T&D)

Input	Data	Unit	Source
A.	Business travel on public transport and private vehicles used for company business	t/CO_2e/yr	Yorkshire Water Carbon Accounting Workbook
B.	Outsourced activities (if not included in Scope 1 or 2) Energy and other	t/CO_2e/yr	Yorkshire Water Carbon Accounting Workbook
C.	Total grid electricity used by company (including CHP electricity purchased)	t/CO_2e/yr	Yorkshire Water Carbon Accounting Workbook
D.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO_2e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 3 emissions (other) = A + B + C*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * D*		

N4.5 Scope 3 reductions in GHG emissions through purchase of green electricity

Table 30. Methodology for calculating the Scope 3 reductions in GHG emissions through purchase of green electricity

Input	Data	Unit	Source
A.	Total grid electricity used by company (including CHP electricity purchased)	t/CO_2e/yr	Yorkshire Water Carbon Accounting Workbook
B.	% purchase of green electricity	%	Internal data provided by Yorkshire Water
C.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO_2e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 3 emissions reductions = A * B*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * C*		

N4.6 Scope 3 GHG emissions (embedded in capital spend)

Table 31. Methodology for calculating the Scope 3 GHG emissions (embedded in capital spend)

Input	Data	Unit	Source
A.	Emissions embedded in capital investment activity	t/CO_2e/£	Yorkshire Water (2018) TIVA - Methodology Report – based on internal cost and carbon models
B.	Capital investment	£/yr	Yorkshire Water ARFS
C.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO_2e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total Scope 3 emissions (embedded) = A * B*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * C*		

N4.7 Other offset GHG emissions from renewable energy export

Table 32. Methodology for calculating the other offset GHG emissions from renewable energy export

Input	Data	Unit	Source
A.	Exported renewables (generated onsite and exported)	t/CO$_2$e/£	Yorkshire Water Carbon Accounting Workbook
B.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO$_2$e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total offset emissions = A*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * B*		

N4.8 Other net GHG sequestered on YW land

Table 33. Methodology for calculating the other net GHG sequestered on YW land

Input	Data	Unit	Source
A.	GHG sequestered on YW land	t/CO$_2$e/£	Yorkshire Water Carbon Sequestration Model
B.	Social cost of carbon (i.e. £288 in 2019 prices)	£/tCO$_2$e	https://route2.com/news/costing-carbon
Physical flows	**Calculations**		
1.	*Total sequestered emissions = A*		
Monetary flows	**Calculations**		
2.	*Total value each year = 1 * B*		

Human Capital

Human capital account

Table 34. Human capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Employees										
Extent	Total number of employees (YW)*^	no./yr	2,451	2,683	2,747	3,067	3,480	High	↑	22%
Extent	Senior managers^	no./yr	22	23	25	29	34	High	↑	26%
Extent	Statutory directors^	no./yr	9	10	12	10	11	High	↑	19%
Condition	Proportion of employees female*^	%	24.0%	24.7%	24.1%	23.1%	23.1%	High	~	-1%
Condition	Proportion of statutory directors female^	%	22.2%	40.0%	33.3%	20.0%	18.2%	High	↑ (+)	26%
Condition	Proportion of senior managers female*^	%	27.3%	30.4%	28.0%	31.0%	35.3%	High	↑ (+)	14%
Condition	Proportion of employees BAME*^	%	4.0%	4.2%	5.1%	4.9%	5.0%	Medium	↑ (+)	20%
Condition	Proportion of senior managers BAME*^	%	4.5%	8.7%	8.0%	10.3%	8.8%	Medium	↑ (+)	99%
Condition	Proportion of statutory directors BAME^	%	0.0%	0.0%	0.0%	0.0%	0.0%	Medium	~	-
Condition	Proportion of employees LGBTQ	%	*Potential future metric to be explored*							
Condition	Proportion of senior managers LGBTQ	%	*Potential future metric to be explored*							
Condition	Proportion of statutory directors LGBTQ	%	*Potential future metric to be explored*							
Condition	Proportion of employees with disability	%	*Potential future metric to be explored*							
Condition	Proportion of senior managers with disability	%	*Potential future metric to be explored*							
Condition	Proportion of statutory directors with disability	%	*Potential future metric to be explored*							

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Condition	Colleague engagement score*^	%	-	78%	71%	73%	80%	High	~	-4%
Condition	Lost Time Injury Rate (LTIR)*^	rate	-	-	0.50	0.34	0.36	High	↓ (+)	-30%
Condition	Proportion of employees with first aid training	%	Potential future metric to be explored							
Condition	Proportion of employees receiving a real living wage	%	100%	100%	100%	100%	100%	High	~	0%
Condition	No. receiving uplift to meet increase in living wage	no./yr	-	-	-	-	105	High	?	-
Condition	Number of external hires	no./yr	566	632	578	1,135	855	High	↑	41%

*Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Table 35. Human capital impacts (i.e. physical flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Performance and Development										
Private	Employees undergoing performance reviews	no./yr	2,451	2,683	2,747	3,067	3,480	Medium	↑ (+)	22%
Private	Employees recruited through internal promotions	no./yr	57	78	73	106	100	High	↑ (+)	19%
Private	Average length of time commuting	min/d	51.86	52.04	52.22	52.40	52.58	Low	~	1%
External	Wage inflation / deflation	%/yr	-	1.43%	1.68%	-3.88%	2.79%	Medium	↓ (-)	-86%
Private	Staff turnover (voluntary leavers)	no./yr	327	348	731	774	413	High	↑ (-)	73%
External	Number of new apprenticeships each year*#	no./yr	17	5	5	5	27	Medium	↓ (-)	-38%
Health, Safety, and Wellbeing										
Private	Lost days avoided through employee engagement	no./yr	-	8,008	5,773	7,048	13,368	Medium	↑ (+)	9%
External	Spend on health / wellbeing benefit programmes	£/yr	-	£413,133	£369,058	£355,916	£562,710	High	~	4%
External	Number of injuries*	no./yr	72	72	61	50	74	Medium	↓ (+)	-14%
External	Workforce extent of unpaid / underpaid overtime	no./yr	Potential future metric to be explored							

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
External	Number of sick days	no./yr	31,570	35,021	38,245	22,495	35,784	Medium	~	4%
Diversity and Inclusion										
External	Gender pay gap (mean hourly rate)*^	%/yr	-	4.8%	4.7%	1.5%	-0.5%	Medium	↓ (+)	-60%
External	BAME pay gap (mean hourly rate)*^	%/yr	-	-	3.0%	-3.3%	-8.8%	Medium	↓ (+)	-302%
External	LGBTQ pay gap (mean hourly rate)	%/yr	Potential future metric to be explored							
External	Disability pay gap (mean hourly rate)	%/yr	Potential future metric to be explored							

*Selected as a KPI
#Metric assured by DNV GL
^Independently assured through Yorkshire Water's standard business processes

Table 36. Human capital values (i.e. monetary flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Performance and Development*			**-£2.8**	**-£3.5**	**-£11.2**	**-£18.2**	**£2.3**	**Medium**	↓ (-)	**-169%**
Private	Value of performance reviews on productivity	£m/yr	£1.1	£1.2	£2.6	£2.7	£1.5	Medium	↑ (+)	82%
Private	Value of internal promotions	£m/yr	£1.1	£1.5	£1.5	£2.1	£2.1	Low	↑ (+)	27%
Private	Value of productivity impacts from commuting	£m/yr	-£1.8	-£1.9	-£1.8	-£1.7	-£1.4	Low	↑ (+)	6%
External	Value of income change from wage inflation/deflation	£m/yr	-	£1.6	£2.0	-£5.0	£4.3	Medium	↓ (-)	-73%
Private	Value to company from voluntary staff turnover	£m/yr	-£7.2	-£7.9	-£17.2	-£18.0	-£10.0	Medium	↓ (-)	-84%
External	Value of SROI from apprenticeships	£m/yr	£4.0	£2.0	£1.7	£1.7	£5.8	Medium	↓ (-)	-29%
Health, Safety, and Wellbeing*			**-£9.6**	**-£7.5**	**-£10.2**	**-£5.5**	**-£6.5**	**Medium**	↑ (+)	**22%**
Private	Value of lost days avoided	£m/yr	-	£2.6	£1.9	£2.9	£4.2	Low	↑ (+)	15%
External	Value provided from health / wellbeing programmes	£m/yr	-	£0.3	£0.5	£0.6	£1.2	Medium	↑ (+)	156%
External	Value of injuries	£m/yr	-£0.9	-£0.7	-£0.8	-£0.6	-£0.7	Medium	↑ (+)	22%

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
External	Value of unpaid / underpaid overtime	£m/yr	Potential future metric to be explored							
External	Value of sickness absence	£m/yr	-£8.7	-£9.7	-£11.8	-£8.4	-£11.2	Medium	↓ (-)	-19%
Diversity and Inclusion*			**-**	**-£1.1**	**-£1.3**	**-£0.4**	**£0.0**	**Low**	**↑ (+)**	**48%**
External	Value of gender pay gap	£m/yr	-	-£1.1	-£1.1	-£0.4	£0.0	Low	↑ (+)	54%
External	Value of BAME pay gap	£m/yr	-	-	-£0.2	£0.0	£0.0	Low	↑ (+)	100%
External	Value of LGBTQ pay gap	£m/yr	Potential future metric to be explored							
External	Value of disability pay gap	£m/yr	Potential future metric to be explored							

*Selected as a KPI

Methodology and data sources

H1. Performance and Development

H1.1 Number of employees undergoing performance reviews

Table 37. Methodology for calculating the number of employees undergoing performance reviews

Input	Data	Unit	Source
A.	Turnover costs	£/yr	See H1.5 Staff turnover (voluntary leavers)
B.	Number of employees subject to performance reviews	%	Internal data provided by Yorkshire Water
C.	Number of employees	no./yr	Yorkshire Water ARFS
D.	Average employment cost per individual	£/yr	Internal data provided by Yorkshire Water
E.	Turnover reduction due to performance reviews (i.e. 14.9%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Asplund & Blacksmith (2011) The Secret of Higher Performance
F.	Increase in productivity due to performance reviews (i.e. 7.467%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on research gathered from a variety of studies

Physical flows	Calculations
1.	*Number of employees subject to performance reviews = B * C*

Monetary flows	Calculations
2.	*Avoided turnover costs = A * B * E*
3.	*Avoided productivity costs = B * D * F*
4.	*Total cost = 2 + 3*

H1.2 Number employees recruited through internal promotions to management positions

Table 38. Methodology for calculating the number employees recruited through internal promotions to management positions

Input	Data	Unit	Source
A.	Number of employees recruited through internal promotions	no./yr	Internal data provided by Yorkshire Water
B.	Average salary per employee	£/yr	Internal data provided by Yorkshire Water
C.	Extra recruitment cost of an external hire (compared to an internal hire) (i.e. £4263.29 in 2012 prices)	£/hire	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Saratoga Institute (2012) US Human Capital Effectiveness Report
D.	Salary increase for an external hire (i.e. 18% salary)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Bidwell (2012) The Effects of External Hiring versus Internal Mobility
E.	Cost of an external hire (in case of a 'bad hire') (i.e. £50,000 in 2013 prices)	£/hire	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Career Builder (2013) 'More Than Half of Companies in the Top Ten World Economies Have Been Affected By a Bad Hire, According to CareerBuilder Survey'
F.	Probability of a 'bad hire' (i.e. 3%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Route2 research
G.	Productivity loss of an external hire (i.e. 20.5% salary)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Bliss et al. (2016) The Business Cost and Impact of Employee Turnover

Physical flows	Calculations
1.	*Total employees = A*

Monetary flows	Calculations
2.	*Avoided recruitment costs of external hires = A * C*
3.	*Avoided increased salary cost of external hire = A * B * D*
4.	*Avoided costs of bad hires = A * E * F*
5.	*Avoided productivity cost of an external hire = A * B * G*
6.	*Total cost = 2 + 3 + 4 + 5*

H1.3 Average length of time commuting

Table 39. Methodology for calculating the average length of time commuting

Input	Data	Unit	Source
A.	Average commuting time to work, minutes	mins	https://www.tuc.org.uk/news/annual-commuting-time-21-hours-compared-decade-ago-finds-tuc
B.	Total working days per employee per year	days/yr	Internal data provided by Yorkshire Water
C.	Number of days lost to commuting for over 20 minutes (i.e. 1.5 days)	days/yr	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Route2 research
D.	Profit for the year	£/yr	Yorkshire Water ARFS

Physical flows	Calculations
1.	*Average commuting time to work = A*

Monetary flows	Calculations
2.	*Attracted productivity loss (%) as a result of commuting > 20 minutes = C / B*
3.	*Total cost = 2 * D*

H1.4 Wage inflation / deflation (magnitude of pay above / below inflation)

Table 40. Methodology for calculating the wage inflation / deflation (magnitude of pay above / below inflation)

Input	Data	Unit	Source
A.	Last year's employment cost per FTE	£/yr	Internal data provided by Yorkshire Water
B.	This year's employment cost per FTE	£/yr	Internal data provided by Yorkshire Water
C.	Inflation (+) or deflation (-) of economy	%	https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?name_desc=false
D.	Total employment costs	£/yr	Yorkshire Water ARFS
Physical flows	**Calculations**		
1.	*Increase or decrease in employment cost = (B – A) / A*		
2.	*Magnitude of pay below inflation = 1 – C*		
Monetary flows	**Calculations**		
3.	*Total costs = 2 * D*		

H1.5 Staff turnover (voluntary leavers)

Table 41. Methodology for calculating the staff turnover (voluntary leavers)

Input	Data	Unit	Source
A.	Number of leavers	no./yr	Internal data provided by Yorkshire Water
B.	Percentage of leavers that were voluntary	%	Internal data provided by Yorkshire Water
C.	Average recruitment time	months	Internal data provided by Yorkshire Water
D.	Direct replacement cost (% of annual salary) (i.e. 20.5%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Bliss et al. (2016) The Business Cost and Impact of Employee Turnover
E.	Lost productivity cost (% of annual salary) (i.e. 20.5%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Bliss et al. (2016) The Business Cost and Impact of Employee Turnover
H.	Average annual employment cost per FTE	£/yr	Internal data provided by Yorkshire Water

Physical flows	Calculations
1.	*Number of voluntary leavers = A * B*

Monetary flows	Calculations
2.	*Lost productivity cost (during recruitment) = (C / 12) * H * 1*
3.	*Lost productivity cost (new staff getting up to speed) = E * H * 1*
4.	*Hiring & training cost for replacement staff (direct replacement cost) = D * H * 1*
5.	*Total cost = 2 + 3 + 4*

H1.6 Number of new apprenticeships each year

Table 42. Methodology for calculating the number of new apprenticeships each year

Input	Data	Unit	Source
A.	Number of apprentices	no./yr	Internal data provided by Yorkshire Water
B.	Total employment cost per apprentice	£/pers.	Internal data provided by Yorkshire Water
C.	Social Return on Investment (SROI) on apprenticeship programmes (i.e. 557%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Route2 research
D.	The total staff hours spend administering the apprenticeship programme	hrs/yr	Internal data provided by Yorkshire Water
E.	Total direct costs required to run the apprenticeship programme	£/yr	Internal data provided by Yorkshire Water
H.	Average hourly employment cost per employee	£/hr	Internal data provided by Yorkshire Water

Physical flows	Calculations
1.	*Number of apprentices = A*

Monetary flows	Calculations
2.	*Total company investment in the apprenticeship programme = (D * H) + E*
3.	*Total investment in apprentice staff = A * B*
4.	*Net social return on investment = ((2 + 3) * C) – (2 + 3)*

H2. Health, Safety, and Wellbeing

H2.1 Lost days avoided through employee engagement

Table 43. Methodology for calculating the lost days avoided through employee engagement

Input	Data	Unit	Source
A.	Proportion of employees classed as engaged	%	Yorkshire Water ARFS
B.	UK Benchmark of employees classified as 'engaged' (i.e. 59%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Aon Hewitt (2017) Trends in Global Employee Engagement
C.	Avoided days lost to absenteeism and presenteeism due to engagement (i.e. 7.5)	days/yr	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Willis Towers Watson (2012) Global Workforce Study
D.	Number of employees that completed the engagement survey (assumed 100%)	no./yr	Yorkshire Water ARFS
E.	Total cost of sickness absence	£/yr	See H2.5 Number of sick days
F.	Number of days lost to sickness	no./yr	See H2.5 Number of sick days
Physical flows	**Calculations**		
1.	*Are benefits provided (i.e. is engagement above average)? = IF (A > B, "Yes", "No")*		
2.	*If benefits are provided then avoided days lost = (C * (1 – (1 – A) / (1 - B)) * D) where 1 is an integer, otherwise avoided days lost = 0*		
Monetary flows	**Calculations**		
3.	*Total cost = (E / F) * 2*		

H2.2 Spend on health / wellbeing benefit programmes

Table 44. Methodology for calculating the spend on health / wellbeing benefit programmes

Input	Data	Unit	Source
A.	Number of staff eligible to benefit from wellbeing programmes (assumed 100%)	no./yr	Yorkshire Water ARFS
B.	Average hourly employment cost	£/hr	Internal data provided by Yorkshire Water
C.	Total direct investment in defined wellbeing programmes	£/yr	Internal data provided by Yorkshire Water
D.	Employee uptake of wellbeing programmes	%	Internal data provided by Yorkshire Water

Input	Data	Unit	Source
E.	Paid hours spent per employee in wellbeing programmes	hrs/pers.	Internal data provided by Yorkshire Water
F.	Social Return on Investment (SROI) in wellbeing programmes (i.e. 150%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Rand Corp. (2014) Do Workplace Wellness Programs Save Employers money?
G.	Individual non-financial gain from a wellbeing programme (i.e. £548 in 2014 prices)	£	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on DCMS (2014) Quantifying and Valuing the Wellbeing Impacts of Culture and Sport
H.	Spending on health care programmes	£	Internal data provided by Yorkshire Water
I.	Return on investment (ROI) for health care programmes (i.e. 141%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Berry et. al. (2010) What's the hard return on employee wellness programmes?
J.	Individual non-financial gain as a percentage of the total ROI on health care programmes (i.e. 6%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Kyla (2015) Income Protection and rehabilitation - working together

Physical flows	Calculations
1.	*Total hours of employee participation in defined wellbeing programmes = A * D * E*
2.	*Employment cost of hours spent in defined wellbeing programmes = 1 * B*
3.	*Total spend = 2 + C + H*

Monetary flows	Calculations
4.	*Return on Investment for employee participation in wellbeing programmes = (C + 2) * F*
5.	*Non-financial benefit to individual = A * D * G*
6.	*Net benefit of wellbeing schemes = (4 + 5) – (2 + C)*
7.	*Corporate benefit from health care programme = (H * I) – (H * I * J)*
8.	*Non-financial benefit to individual of health care programme = H * I * J*
9.	*Net benefit of health programme = (7 + 8) – H*

Input	Data	Unit	Source
10.	*Total benefits = 6 + 9*		

H2.3 Number of injuries

Table 45. Methodology for calculating the number of injuries

Input	Data	Unit	Source
A.	Number of Minor Injuries	no./yr	Internal data provided by Yorkshire Water
B.	Number of Major Injuries	no./yr	Internal data provided by Yorkshire Water
C.	Minor injury cost (i.e. £880 in 2015 prices)	£	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on UK Health and Safety Executive (2015/16)
D.	Major injury cost (i.e. £30,390 in 2015 prices)	£	As above
Physical flows	**Calculations**		
1.	*Total injuries = A + B*		
Monetary flows	**Calculations**		
2.	*Total costs = (A * C) + (B * D)*		

H2.4 Workforce extent of unpaid / underpaid overtime

Not included in this version of the accounts.

H2.5 Number of sick days

Table 46. Methodology for calculating the number of sick days

Input	Data	Unit	Source
A.	Number of days lost	no./yr	Internal data provided by Yorkshire Water
B.	Average daily employment cost per employee	£/day	Internal data provided by Yorkshire Water
C.	Medical treatment cost per minor illness (minor) (i.e. £29.58 in 2016 prices)	£	Yorkshire Water (2017) Human &

Input	Data	Unit	Source
			Intellectual Capital Flow Indicator Descriptions & Calculations – based on The Guardian (2016) How much have I cost the NHS?
D.	Medical treatment cost per Musculoskeletal problem (minor) (i.e. £2,332.22 in 2016 prices)	£	As above
E.	Medical treatment cost per 'Other' illness (minor) (i.e. £1,018.68 in 2016 prices)	£	As above
F.	Medical treatment cost per episode of Stress, depression, or anxiety (minor) (i.e. £714.95 in 2016 prices)	£	As above
G.	Medical treatment cost per episode of Gastrointestinal problem (minor) (i.e. £217.94 in 2016 prices)	£	As above
H.	Medical treatment cost per eye/ear/nose/mouth/dental problem (minor) (i.e. £374.73 in 2016 prices)	£	As above
I.	Medical treatment cost per respiratory condition (minor) (i.e. £567.03 in 2016 prices)	£	As above
J.	Medical treatment cost per headache or migraine (minor) (i.e. £493.07 in 2016 prices)	£	As above
K.	Medical treatment cost per genito-urinary problem (minor) (i.e. £798.77 in 2016 prices)	£	As above
L.	Medical treatment cost per heart, blood pressure, or circulation problem (major) (i.e. £2,524.51 in 2016 prices)	£	As above
M.	Medical treatment cost per episode of a serious mental health problem (major) (i.e. £2,056.10 in 2016 prices)	£	As above
N.	Number of sickness episodes per minor illness (minor)	no.	Internal data provided by Yorkshire Water
O.	Number of sickness episodes per Musculoskeletal problem (minor)	no.	Internal data provided by Yorkshire Water
P.	Number of sickness episodes per 'Other' illness (minor)	no.	Internal data provided by Yorkshire Water
Q.	Number of sickness episodes per episode of Stress, depression, or anxiety (minor)	no.	Internal data provided by Yorkshire Water
R.	Number of sickness episodes per episode of Gastrointestinal problem (minor)	no.	Internal data provided by Yorkshire Water
S.	Number of sickness episodes per eye/ear/nose/mouth/dental problem (minor)	no.	Internal data provided by Yorkshire Water
T.	Number of sickness episodes per respiratory condition (minor)	no.	Internal data provided by Yorkshire Water
U.	Number of sickness episodes per headache or migraine (minor)	no.	Internal data provided by Yorkshire Water
V.	Number of sickness episodes per genito-urinary problem (minor)	no.	Internal data provided by Yorkshire Water
W.	Number of sickness episodes per heart, blood pressure, or circulation problem (major)	no.	Internal data provided by Yorkshire Water

Input	Data	Unit	Source
X.	Number of sickness episodes per episode of a serious mental health problem (major)	no.	Internal data provided by Yorkshire Water
Y.	Individual Non-Financial Cost (minor illness) (i.e. £320.00 in 2015 prices)	£	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on UK Health and Safety Executive (2015/16)
Z.	Individual Non-Financial Cost (major illness) (i.e. £19,400.00 in 2015 prices)	£	As above
AA.	Individual Financial Cost (minor illness) (i.e. £90.00 in 2015 prices)	£	As above
AB.	Individual Financial Cost (major illness) (i.e. £710.00 in 2015 prices)	£	As above
Physical flows	**Calculations**		
1.	*Total sickness days = A*		
Monetary flows	**Calculations**		
2.	*Number of minor sickness episodes = SUM(N:V)*		
3.	*Number of major sickness episodes = SUM(W:X)*		
4.	*Cost of lost days productivity = 1 * B*		
5.	*Individual non-financial costs of a minor illness = 2 * Y*		
6.	*Individual non-financial costs of a major illness = 3 * Z*		
7.	*Individual financial costs of a minor illness = 2 * AA*		
8.	*Individual financial costs of a major illness = 3 * AB*		
9.	*Government cost of treatment = SUMPRODUCT(C:M, N:X)*		
10.	*Total cost = 4 + 5 + 6 + 7 + 8 + 9*		

H3. Diversity and Inclusion

H3.1 Gender pay gap (mean hourly rate)

Table 47. Methodology for calculating the gender pay gap (mean hourly rate)

Input	Data	Unit	Source
A.	Average salary per employee	no./yr	Internal data provided by Yorkshire Water
B.	Gender pay gap (mean hourly rate)	%	Yorkshire Water ARFS
C.	Number of female employees	no./yr	Yorkshire Water ARFS
Physical flows	**Calculations**		
1.	$Pay\ gap = B$		
Monetary flows	**Calculations**		
2.	$Total\ cost = IF((A*B*C) > 0,\ 0,\ A*B*C))$		

H3.2 BAME pay gap (mean hourly rate)

Table 48. Methodology for calculating the BAME pay gap (mean hourly rate)

Input	Data	Unit	Source
A.	Average salary per employee	no./yr	Internal data provided by Yorkshire Water
B.	BAME pay gap (mean hourly rate)	%	Yorkshire Water ARFS
C.	Number of BAME employees	no./yr	Yorkshire Water ARFS
Physical flows	**Calculations**		
1.	$Pay\ gap = B$		
Monetary flows	**Calculations**		
2.	$Total\ cost = IF((A*B*C) > 0,\ 0,\ A*B*C))$		

H3.3 LGBTQ pay gap (mean hourly rate)

Not included in this version of the accounts.

H3.4 Disability pay gap (mean hourly rate)

Not included in this version of the accounts.

Intellectual Capital

Intellectual capital account

Table 49. Intellectual capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
People and Partnerships										
Extent	No. of solutions delivered in partnership with others*^	no./yr	4	5	12	11	11	Medium	↑ (+)	144%
Extent	Number of staff working in the Innovation team	no./yr	1	1	6	7	12	High	↑ (+)	550%
Extent	Number of PhDs supported	no./yr	*Potential future metric to be explored*							
Extent	Number of staff undergoing training	no./yr	*Potential future metric to be explored*							
Condition	Staff with professional or vocational qualifications	%	*Potential future metric to be explored*							
Ideas and Innovation										
Extent	Number of patents	no./yr	*Potential future metric to be explored*							
Extent	Number of peer-review journal articles published	no./yr	*Potential future metric to be explored*							
Extent	Number of industry awards won	no./yr	*Potential future metric to be explored*							
Extent	Number of R&D projects	no./yr	*Potential future metric to be explored*							
Extent	Number of open access data files released*	no./yr	19	20	43	85	100	High	↑ (+)	226%
Data and Technology										
Extent	No. remote sensors on the network*	no./yr	-	-	-	19,200	42,785	Low	↑ (+)	-
Extent	No. remote sensors on the water network	no./yr	-	-	-	18,000	40,385	Low	↑ (+)	-
Extent	No. remote sensors on the wastewater network	no./yr	-	-	-	1,200	2,400	Low	↑ (+)	-

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Condition	Proportion of network covered by remote sensors	%	*Potential future metric to be explored*							

Selected as a KPI

^Independently assured through Yorkshire Water's standard business processes*

Table 50. Intellectual capital impacts (i.e. physical flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Research and Development										
Private	Total spend on R&D*^	£/yr	£5,100,000	£5,500,000	£4,800,000	£3,200,000	£4,000,000	High	↓ (-)	-14%
Knowledge and Learning										
Private	Total employee hours spent on training*	hrs/yr	44,739	77,107	113,978	106,152	275,906	Medium	↑ (+)	220%
External	Number of computers	no./yr	*Potential future metric to be explored*							
Private	Knowledge decay rate	%/yr	*Potential future metric to be explored*							
External	Number participants in educational programmes#	no./yr	14,157	11,370	14,121	16,873	18,940	High	↑ (+)	8%
Processes and Efficiency			**£18,554,280**	**£28,633,803**	**£40,731,721**	**£61,594,699**	**£52,863,387**	**Medium**	**↑ (+)**	**148%**
Private	Total spend on software	£/yr	£14,323,680	£16,726,275	£10,434,780	£9,845,480	£22,170,850	High	~	3%
Private	Total spend on hardware	£/yr	£4,230,600	£11,907,528	£30,296,941	£40,549,219	£17,453,537	High	↑ (+)	492%
Private	Total spend on remote sensors*	£/yr	-	-	-	£11,200,000	£13,239,000	Low	↑ (+)	-
Private	Total spend on process management	£/yr	*Potential future metric to be explored*							
Private	Total spend on transformation	£/yr	*Potential future metric to be explored*							

Selected as a KPI

#Metric assured by DNV GL*

^Independently assured through Yorkshire Water's standard business processes*

Table 51. Intellectual capital values (i.e. monetary flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Research and Development*			**£18.4**	**£19.8**	**£17.3**	**£11.5**	**£14.4**	**Low**	↓ (-)	**-14%**
Private	Value of R&D	£m/yr	£18.4	£19.8	£17.3	£11.5	£14.4	Low	↓ (-)	-14%
Knowledge and Learning*			**£5.6**	**£7.6**	**£8.7**	**£9.6**	**£21.4**	**Low**	↑ (+)	**112%**
Private	Value of employee training	£m/yr	£5.3	£7.3	£8.4	£9.2	£20.9	Medium	↑ (+)	117%
External	Value of public information consumed for free	£m/yr	*Potential future metric to be explored*							
Private	Value of knowledge decay	£m/yr	*Potential future metric to be explored*							
External	Value of educational visits	£m/yr	£0.3	£0.3	£0.3	£0.4	£0.5	Low	↑ (+)	25%
Processes and Efficiency*			-	-	-	-	-	-	-	-
Private	Value of spend on software	£m/yr	*Potential future metric to be explored*							
Private	Value of spend on hardware	£m/yr	*Potential future metric to be explored*							
Private	Value of spend on remote sensors	£m/yr	*Potential future metric to be explored*							
Private	Value of spend on process management	£m/yr	*Potential future metric to be explored*							
Private	Value of spend on transformation	£m/yr	*Potential future metric to be explored*							

Selected as a KPI

Methodology and data sources

I1. Research and Development

I1.1 Total spend on R&D

Table 52. Methodology for calculating the total spend on R&D

Input	Data	Unit	Source
A.	Direct spend on research & development (R&D) activities	£/yr	Internal data provided by Yorkshire Water

Input	Data	Unit	Source
B.	ROI for R&D	%	Internal data provided by Yorkshire Water

Physical flows	Calculations
1.	*Total spend = A*

Monetary flows	Calculations
2.	*Net ROI = (A * B) – A*

I2. Knowledge and Learning

I2.1 Total employee hours spent on training

Table 53. Methodology for calculating the total employee hours spent on training

Input	Data	Unit	Source
A.	Diversity programmes - direct spend	£/yr	Internal data provided by Yorkshire Water
B.	Efficiency skills - direct spend	£/yr	Internal data provided by Yorkshire Water
C.	Health and safety - direct spend	£/yr	Internal data provided by Yorkshire Water
D.	New employee - direct spend	£/yr	Internal data provided by Yorkshire Water
E.	Professional skills - direct spend	£/yr	Internal data provided by Yorkshire Water
F.	Soft skills - direct spend	£/yr	Internal data provided by Yorkshire Water
G.	Leadership skills - direct spend	£/yr	Internal data provided by Yorkshire Water
H.	Diversity programmes - total hours	hr/yr	Internal data provided by Yorkshire Water
I.	Efficiency skills - total hours	hr/yr	Internal data provided by Yorkshire Water
J.	Health and safety - total hours	hr/yr	Internal data provided by Yorkshire Water
K.	New employee - total hours	hr/yr	Internal data provided by Yorkshire Water
L.	Professional skills - total hours	hr/yr	Internal data provided by Yorkshire Water
M.	Soft skills - total hours	hr/yr	Internal data provided by Yorkshire Water

Input	Data	Unit	Source
N.	Leadership skills - total hours	hr/yr	Internal data provided by Yorkshire Water
O.	Average hourly employment cost per member of staff	£/hr	Internal data provided by Yorkshire Water
P.	Diversity programmes – ROI (i.e. 283%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Route2 research
Q.	Efficiency skills – ROI (i.e. 314%)	%	As above
R.	Health and safety – ROI (i.e. 396%)	%	As above
S.	New employee – ROI (i.e. 324%)	%	As above
T.	Professional skills – ROI (i.e. 375%)	%	As above
U.	Soft skills – ROI (i.e.128%)	%	As above
V.	Leadership skills – ROI (i.e. 397%)	%	As above
Physical flows	**Calculations**		
1.	*Total hours spent in training programmes = SUM(H:N)*		
Monetary flows	**Calculations**		
2.	*Employment costs = O * SUM(H:N)*		
3.	*Total investment = 2 + SUM(A:G)*		
4.	*Net ROI = (3 * SUM(P:V)) – 3*		

I2.2 Number of computers

Not included in this version of the accounts.

I2.3 Knowledge decay rate

Not included in this version of the accounts.

I2.4 Number participants in educational programmes

Table 54. Methodology for calculating the number participants in educational programmes

Input	Data	Unit	Source
A.	Number of educational visits	no./yr	Internal data provided by Yorkshire Water
B.	Value per visit (i.e. £21.03 in 2010 prices)	£	Defra ENCA workbook
Physical flows	**Calculations**		
1.	*Total visits = A*		
Monetary flows	**Calculations**		
2.	*Total value = A * B*		

I3. Processes and Efficiency

I3.1 Total spend on software

Data on total spend provided by Yorkshire Water, impact of this spend not included in this version of the accounts.

I3.2 Total spend on hardware

Data on total spend provided by Yorkshire Water, impact of this spend not included in this version of the accounts.

I3.3 Total spend on remote sensors

Data on total spend provided by Yorkshire Water, impact of this spend not included in this version of the accounts.

I3.4 Total spend on process management

Data on total spend provided by Yorkshire Water, impact of this spend not included in this version of the accounts.

I3.5 Total spend on transformation

Data on total spend provided by Yorkshire Water, impact of this spend not included in this version of the accounts.

Social Capital

Social capital account

Table 55. Social capital assets (i.e. asset account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust -ness	5 year trend	5 year trend (%)
Site Visitors										
Extent	Number of public visits to YW open sites*	no./yr	-	-	-	-	2,642,148	Low	?	-
Extent	Number of visits involving exercise on YW sites	no./yr	-	-	-	-	2,530,501	Low	?	-
Condition	Proportion of non-white visitors*	%	-	-	-	-	1.7%	Low	?	-
Condition	Proportion of disabled visitors	%	-	-	-	-	0.5%	Low	?	-
Condition	Proportion of AB visitors[5]	%	-	-	-	-	31%	Low	?	-
Condition	Proportion of C1 visitors[3]	%	-	-	-	-	35%	Low	?	-
Condition	Proportion of C2 visitors[3]	%	-	-	-	-	22%	Low	?	-
Condition	Proportion of DE visitors[3]	%	-	-	-	-	10%	Low	?	-
Condition	Visitor satisfaction^	%	98%	97%	96%	99%	99%	High	~	0%
Customers										
Extent	Total number of household customers*^	no.	2,133,475	2,153,064	2,164,756	2,177,838	2,189,773	High	~	2%
Condition	Customer satisfaction (average)*^	%	94%	92%	92%	92%	92%	High	~	-2%
Condition	- Customer satisfaction (water)^	%	95%	93%	94%	95%	94%	High	~	-1%

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[5] AB = Higher & intermediate managerial, administrative, professional occupations; C1 = Supervisory, clerical & junior managerial, administrative, professional occupations; C2 = Skilled manual occupations; DE = Semi-skilled & unskilled manual occupations, Unemployed and lowest grade occupations.

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Condition	- Customer satisfaction (wastewater)^	%	92%	91%	89%	88%	90%	High	~	-3%
Condition	Quality of customer service (SIM)^	score 0-100	82.6	83.4	84.3	84.0	83.2	High	~	1%
Condition	C-Mex score	score	*Potential future metric to be explored*							
Condition	D-Mex score	score	*Potential future metric to be explored*							
Condition	Value for money (average)	%	83%	81%	78%	78%	80%	High	~	-4%
Condition	- Value for money (water)^	%	82%	79%	76%	77%	79%	High	↓ (-)	-5%
Condition	- Value for money (wastewater)^	%	83%	82%	79%	79%	80%	High	~	-4%
Condition	Average combined customer bill^	£/yr	£363	£366	£373	£387	£392	High	~	4%
Condition	Cost of bad debt to customers in the average bill^	%	3.05%	2.94%	3.10%	3.02%	3.06%	High	~	-1%
Condition	Service commitment failures^	no./yr	10,567	10,356	12,203	14,221	15,140	High	↑ (-)	23%
Condition	Drinking water compliance^	%	99.954%	99.962%	99.953%	99.962%	99.949%	High	~	0%
Condition	Corrective actions to protect water safety^	no./yr	5	3	4	5	1	High	↓ (+)	-35%
Condition	Average water supply interruption length^	mins:secs	12:53	9:47	6:58	10:28	7:34	High	↓ (+)	-
Condition	Number of Performance Commitments met^	%	92%	92%	85%	81%	85%	High	↓ (-)	-7%
Condition	Unplanned outages in water supplies	Ml/d	*Potential future metric to be explored*							
Condition	Risks of severe restrictions in a drought	%	*Potential future metric to be explored*							
Vulnerable Customers										
Extent	Number of customers on the PSR*^	no./yr	35,009	39,711	44,194	53,966	65,661	High	↑ (+)	45%
Condition	Share of households on the PSR	%	*Potential future metric to be explored*							
Condition	Awareness of the PSR*^	%	47%	48%	45%	47%	42%	High	~	-3%
Condition	PSR satisfaction	%	*Potential future metric to be explored*							
Condition	Number of employees registered as Dementia Friends	no.	0	0	0	295	591	Medium	↑ (+)	-
Condition	Inclusive customer service score	score 0-675	-	-	-	-	434	High	?	-

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Stakeholders										
Extent	Total number of key stakeholders	no.	131	131	131	131	125	High	~	-1%
Condition	Political sentiment	% positive	-	-	64%	58%	43%	Medium	↓ (-)	-
Suppliers										
Extent	Total number of suppliers*#	no.	1,749	1,532	1,330	1,094	1,760	Medium	↓	-18%
Condition	Total spend on suppliers	£m/yr	*Commercially sensitive*					High	↑ (+)	46%
Condition	Total spend on SMEs	£m/yr	£60.0	£63.3	£58.5	£81.2	£97.2	High	↑ (+)	25%
Condition	Share of spend on SMEs	%	10%	8%	7%	8%	9%	High	↓ (-)	-15%
Condition	Total spend on local companies	-	*Potential future metric to be explored*							
Condition	% of invoices paid late*	%/yr	48%	75%	59%	31%	38%	High	↑ (-)	5%
Condition	% of invoices paid on time	%/yr	3%	15%	1%	1%	0%	High	↑ (+)	26%
Condition	% of invoices paid early	%/yr	48%	11%	40%	68%	61%	High	↓ (-)	-7%
Groups Reached via Media										
Extent	Media coverage volume	no. reports	-	-	3,018	4,883	3,942	High	↑ (+)	46%
Extent	Reach on social media	no. interactions	-	-	4,523,484	4,591,094	5,947,020	High	↑ (+)	16%
Condition	Media sentiment	% positive	-	-	63%	57%	51%	High	↓ (-)	-14%
Condition	Brand perception	0-10	-	8.23	8.29	8.21	8.62	High	~	2%

*Selected as a KPI
#Metric assured by DNV GL
^Independently assured through Yorkshire Water's standard business processes

Table 56. Social capital impacts (i.e. physical flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Trust										
External	Late payments to suppliers	no./yr	49,899	82,072	64,356	36,370	47,906	High	↑ (-)	16%
External	Early payments to suppliers*	no./yr	50,022	11,797	43,630	80,231	76,256	High	↑ (+)	6%
Private	Customer trust in YW	%/yr	-	86.70%	85.10%	82.60%	90.40%	High	~	-1%
Health and Wellbeing										
External	Health benefits of providing a public water supply	QALYs/yr	201	202	203	205	206	Low	~	1%
External	Health benefits of recreational exercise on YW sites*	QALYs/yr	-	-	-	-	315	Low	?	-
External	Volunteering time provided	hrs/yr	-	-	-	2,468	3,827	High	↑ (+)	-
External	Amount raised for WaterAid	£/yr	£181,540	£281,000	£125,000	£142,094	£312,993	High	↑ (+)	19%
Quality of Service										
External	Total amount of water delivered to customers^	Ml/yr	-	-	383,239	390,097	382,408	High	~	1%
External	Drinking water contacts^	no./yr	10,007	9,093	8,100	7,964	6,368	High	↓ (+)	-21%
External	Internal flooding incidents*^	no./yr	1,842	1,769	1,682	1,692	1,602	High	↓ (+)	-8%
External	External flooding incidents^	no./yr	9,037	9,145	9,296	9,116	9,139	High	~	2%
External	Significant water supply events (>12 hours)	no./yr	*Potential future metric to be explored*							
External	Properties below the low pressure threshold	no./yr	*Potential future metric to be explored*							
Vulnerability										
External	Customers YW provide financial support to*^	no./yr	22,890	26,612	28,629	31,606	35,939	High	↑ (+)	34%
External	At risk customers YW provide specialist support to	no./yr	-	-	-	9	12	High	↑ (+)	-

*Selected as a KPI
^Independently assured through Yorkshire Water's standard business processes

Table 57. Social capital values (i.e. monetary flows account)

Category	Metric	Unit	2015/16	2016/17	2017/18	2018/19	2019/20	Robust-ness	5 year trend	5 year trend (%)
Trust*			**-£0.9**	**-£2.0**	**-£1.6**	**-£0.8**	**£4.2**	**Low**	**↑ (+)**	**94%**
External	Value of late payments to suppliers	£m/yr	-£1.2	-£2.5	-£2.2	-£2.0	-£1.7	High	↓ (-)	-75%
External	Value of early payments to suppliers	£m/yr	£0.3	£0.5	£0.6	£1.2	£5.9	High	↑ (+)	583%
Private	Value of customer trust	£m/yr	*Potential future metric to be explored*							
Health and Wellbeing*			**£6.0**	**£6.7**	**£5.8**	**£6.2**	**£15.3**	**Medium**	**↑ (+)**	**41%**
External	Value of health benefits of providing public water	£m/yr	£5.0	£5.1	£5.1	£5.1	£5.1	Medium	~	2%
External	Value of health benefits of recreational exercise	£m/yr	-	-	-	-	£7.9	Medium	?	-
External	Value of volunteering time	£m/yr	-	-	-	£0.3	£0.5	Medium	↑ (+)	-
External	Value leveraged from money contributed to WaterAid	£m/yr	£1.0	£1.6	£0.7	£0.8	£1.8	Low	↑ (+)	19%
Quality of Service*			**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
External	Value of delivering water to customers	£m/yr	*Potential future metric to be explored*							
External	Value of drinking water quality incidents	£m/yr	*Potential future metric to be explored*							
External	Value of internal flooding incidents	£m/yr	*Potential future metric to be explored*							
External	Value of external flooding incidents	£m/yr	*Potential future metric to be explored*							
External	Value of significant water supply events	£m/yr	*Potential future metric to be explored*							
External	Value of low pressure properties	£m/yr	*Potential future metric to be explored*							
Vulnerability*			**£2.5**	**£2.9**	**£3.2**	**£3.7**	**£4.2**	**Low**	**↑ (+)**	**41%**
External	Value of wellbeing from customers support	£m/yr	£2.5	£2.9	£3.2	£3.7	£4.2	Low	↑ (+)	41%
External	Value of supporting customers at risk	£m/yr	*Potential future metric to be explored*							

*Selected as a KPI

Methodology and data sources

S1. Trust

S1.1 Late payments to suppliers

Table 58. Methodology for calculating the late payments to suppliers

Input	Data	Unit	Source
A.	Number of late payments to suppliers	no./yr	Internal data provided by Yorkshire Water
B.	Amount of payment per individual invoice	£	Internal data provided by Yorkshire Water
C.	Interest rate on late commercial payments (i.e. 8% + Bank of England base rate)	%	Yorkshire Water (2018) TIVA - Methodology Report - based on Gov.uk: Interest on late commercial payments and Bank of England Statistical Interactive Database - official Bank Rate history
D.	Number of days per year (i.e. 365)	no.	-
E.	Number of days late per individual invoice	no.	Internal data provided by Yorkshire Water
Physical flows	**Calculations**		
1.	*Total late payments = A*		
Monetary flows	**Calculations**		
2.	*Cost per day each payment is late = (B * C) / D*		
3.	*Total cost = 2 * E (summed across all invoices)*		

S1.2 Early payments to suppliers

Table 59. Methodology for calculating the early payments to suppliers

Input	Data	Unit	Source
A.	Number of early payments to suppliers	no./yr	Internal data provided by Yorkshire Water
B.	Amount of payment per individual invoice	£	Internal data provided by Yorkshire Water
C.	Interest rate on late commercial payments (i.e. 8% + Bank of England base rate)	%	Yorkshire Water (2018) TIVA - Methodology Report -

Input	Data	Unit	Source
			based on Gov.uk: Interest on late commercial payments and Bank of England Statistical Interactive Database - official Bank Rate history
D.	Number of days per year (i.e. 365)	no.	-
E.	Number of days early per individual invoice	no.	Internal data provided by Yorkshire Water
Physical flows	**Calculations**		
1.	*Total early payments = A*		
Monetary flows	**Calculations**		
2.	*Avoided cost per day each payment is early = (B * C) / D*		
3.	*Total avoided cost = 2 * E (summed across all invoices)*		

S1.3 Customer trust in YW

Not included in this version of the accounts.

S2. Health and Wellbeing

S2.1 Health benefits of providing a public water supply compared to a private supply

Table 60. Methodology for calculating the health benefits of providing a public water supply compared to a private supply

Input	Data	Unit	Source
A.	Total number of households provided with water by YW	hh/yr	Yorkshire Water APR
B.	Average household size Yorkshire (i.e. 2.3)	no./hh	www.statista.com/statistics/295548/households-in-england-uk-average-size-by-region/
C.	Likelihood of waterborne illness per person using a private water supply (i.e. 0.18%)	%	Smith et al. (2006) 'Outbreaks of waterborne infectious intestinal disease'
D.	Likelihood of waterborne illness per person using a public water supply (i.e. 0.0053%)	%	Smith et al. (2006) 'Outbreaks of waterborne infectious intestinal disease'
E.	QALYs lost per case of Cryptosporidium	QALYs	eftec (2017) 'Estimating Quality Adjusted Life Years and Willingness to Pay Values for Microbiological Foodborne Disease (Phase 2)'

Input	Data	Unit	Source
F.	Monetary value of QALY (i.e. £25,000 assumed constant across price years)	£	NICE (2013) 'How NICE measures value for money in relation to public health interventions'
Physical flows	**Calculations**		
1.	*Total number of people provided with water by Yorkshire Water = A * B*		
2.	*Total number of illnesses avoided by Yorkshire Water supply = (1 * C) – (1 * D)*		
3.	*Total number of lost QALYs avoided by Yorkshire Water supply = 2 * E*		
Monetary flows	**Calculations**		
4.	*Total value = 3 * F*		

S2.2 Health benefits of recreational exercise on YW sites

Table 61. Methodology for calculating the health benefits of recreational exercise on YW sites

Input	Data	Unit	Source
A.	Health benefits of recreational exercise on YW sites	QALYs	Yorkshire Water Little Don Capitals Valuation Tool drawing on data on visitor numbers from ORVal tool, internal data from Yorkshire Water on visitor profiles, White et al. (2016) Recreational Physical Activity in Natural Environments and Implications for Health: A Population Based Cross-Sectional Study in England, and Natural England (2017) Monitor of Engagement with the Natural Environment
B.	Monetary value of QALY (i.e. £25,000 assumed constant across price years)	£	NICE (2013) 'How NICE measures value for money in relation to public health interventions'
Physical flows	**Calculations**		
1.	*Total benefits = A*		
Monetary flows	**Calculations**		
2.	*Total value = A * B*		

S2.3 Volunteering time provided

Table 62. Methodology for calculating the volunteering time provided

Input	Data	Unit	Source
A.	Number of employee Volunteer Programme hours undertaken	hrs/yr	Internal data provided by Yorkshire Water
B.	Number of employee participants	no./yr	Internal data provided by Yorkshire Water
C.	Employee Volunteer Benefit hours threshold (i.e. 100)	hrs/yr	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Corporation for National & Community Service (2007) The Health Benefits of Volunteering
D.	Health benefits for employees that volunteer (i.e. £3,313 in 2014 prices)	£	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Bank of England (2014) In giving, how much do we receive? The social value of volunteering
E.	Average employment cost per hour per employee	£/hr	Internal data provided by Yorkshire Water
F.	Monetary investment in volunteering programmes	£/yr	Internal data provided by Yorkshire Water
G.	Employee volunteer programme Return On Investment (ROI) (i.e. 412%)	%	Yorkshire Water (2017) Human & Intellectual Capital Flow Indicator Descriptions & Calculations – based on Octavia Foundation (2011) Placing a value on work. A social return on investment report
Physical flows	**Calculations**		
1.	*Total volunteering time = A*		
Monetary flows	**Calculations**		
2.	*Volunteering time per employee = A / B*		
3.	*Volunteering benefit factor = 2 / C*		
4.	*Benefit to individual volunteers = B * 3 * D*		
5.	*Employment cost of employee volunteer programme hours undertaken = E * 1*		
6.	*Total cost of volunteering employment = 5 + F*		
7.	*Total net value to wider society of volunteering = (6 * G) - 6*		
8.	*Total value of volunteering = 4 + 7*		

S2.4 Amount raised for WaterAid

Table 63. Methodology for calculating the amount raised for WaterAid

Input	Data	Unit	Source
A.	Amount raised for WaterAid	£/yr	Internal data provided by Yorkshire Water
B.	Amount leveraged per £ invested	£/£	Internal data provided by WaterAid
Physical flows	**Calculations**		
1.	*Total amount raised = A*		
Monetary flows	**Calculations**		
2.	*Total value of amount raised = A * B*		

S3. Quality of Service

S3.1 Total amount of water delivered to customers

Table 64. Methodology for calculating the total amount of water delivered to customers

Input	Data	Unit	Source
A.	Total potable water delivered	Ml/yr	Yorkshire Water APR
Physical flows	**Calculations**		
1.	*Total water delivered = A*		
Monetary flows	**Calculations**		
2.	*Not included in this version of the accounts*		

S3.2 Drinking water contacts

Table 65. Methodology for calculating the drinking water contacts

Input	Data	Unit	Source
A.	Total w ater contacts	no./yr	Yorkshire Water ARFS
Physical flows	**Calculations**		
1.	*Total contacts = A*		
Monetary flows	**Calculations**		
2.	*Not included in this version of the accounts*		

S3.3 Internal flooding incidents

Table 66. Methodology for calculating the internal flooding incidents

Input	Data	Unit	Source
A.	Total internal flooding incidents	no./yr	Yorkshire Water ARFS
Physical flows	**Calculations**		
1.	*Total incidents = A*		
Monetary flows	**Calculations**		
2.	*Not included in this version of the accounts*		

S3.4 External flooding incidents

Table 67. Methodology for calculating the external flooding incidents

Input	Data	Unit	Source
A.	Total external flooding incidents	no./yr	Yorkshire Water ARFS
Physical flows	**Calculations**		

Input	Data	Unit	Source
1.	*Total incidents = A*		
Monetary flows	**Calculations**		
2.	*Not included in this version of the accounts*		

S3.5 Significant water supply events (>12 hours)

Not included in this version of the accounts.

S3.6 Number of properties below the low pressure threshold

Not included in this version of the accounts.

S4. Vulnerability

S4.1 Number of customers YW provide financial support to

Table 68. Methodology for calculating the number of customers YW provide financial support to

Input	Data	Unit	Source
A.	Number of household customers supported by customer payment schemes	no./yr	Internal data provided by Yorkshire Water
B.	Prop. of general pop. suffering from mental health issues (neurotic disorders) and in debt (i.e. 32.5%)	%	Jenkins et al. (2008) 'Mental disorder in people with debt in the general population'
C.	Prop. of general pop. suffering from mental health issues (neurotic disorders) not in debt (14.2%)	%	Jenkins et al. (2008) 'Mental disorder in people with debt in the general population'
D.	Monetary equivalent of annual costs associated with depression and anxiety per individual (i.e. £44,237 in 2014 prices)	£	UK Council for Psychotherapy (2014) 'Valuing mental health: how a subjective wellbeing approach can show just how much it matters'
E.	Average weekly water bill for YW customers	£/wk	Internal data provided by Yorkshire Water
F.	Average weekly household expenditure for general population	£/wk	ONS (2019) 'Family spending in the UK: April 2017 to March 2018'
Physical flows	**Calculations**		
1.	*Total customers supported = A*		

Monetary flows	Calculations
2.	*Prop. of general pop. suffering from mental health issues (neurotic disorders) due to debt = B – C*
3.	*Number of YW customers supported that are suffering from mental health issues due to debt = 1 * 2*
4.	*Total cost of mental health issues related to debt for YW customers supported by schemes = 3 * D*
5.	*Contribution of water bills to customers debt = E / F*
6.	*Reduction in costs of mental health issues related to debt for YW customers supported by schemes = 4 * 5*

S4.2 Number of customers at risk that YW provide specialist support to

Table 69. Methodology for calculating the number of customers at risk that YW provide specialist support to

Input	Data	Unit	Source
A.	Number of customers at risk that YW provide specialist support to	no./yr	Internal data provided by Yorkshire Water
Physical flows	**Calculations**		
1.	*Total customers supported = A*		
Monetary flows	**Calculations**		
2.	*Not included in this version of the accounts*		

Assurance

Overview

In order to verify and review the data and methodologies used in the development of the Our Contribution model, DNV GL were asked to assure the approach. The assurance process involved a review and verification of the following five metrics:

- **Manufactured capital:** Total waste produced (t/yr)

- **Natural capital:** Number of biodiversity units (no.)

- **Social capital:** Total number of suppliers (no.)

- **Human capital:** Number of new apprentices each year (no./yr)

- **Intellectual capital:** Number of participants in education programmes (no./yr)

Definitions and methodologies for calculating each of these metrics are provided in the following section. DNV GL's independent assurance report can be found at www.yorkshirewater.com/capitals.

Metrics

Total waste produced (t/yr)

This metric is defined as the total amount of waste produced by Yorkshire Water each year and includes clean water sludge. The figures provided for this metric are derived from an internal waste reporting process within Yorkshire Water that provides estimates of the total amount of waste produced on a monthly basis.

Number of biodiversity units (no.)

This metric is defined as the total number of biodiversity units provided by habitats within the Yorkshire Water estate. Biodiversity units are defined by the Natural England Biodiversity Metric 2.0 and are dependent upon the type, area, condition, connectivity, and local significance of habitats within the estate.

In order to estimate the number of biodiversity units for this assessment, AECOM obtained habitat data for the Yorkshire Water estate from the CEH Land Cover map for 2015 and 2019. The habitat classifications used within the CEH Land Cover map were then converted to the classifications used within the Defra Biodiversity Metric 2.0 on the basis of professional judgement. The type and area of each habitat was then input into the Biodiversity Metric 2.0 in order to calculate the number of biodiversity units. Due to a lack of data on habitat condition, connectivity, and local significance, it was assumed that all of these factors were classified as moderate.

The Biodiversity Metric 2.0 was used to calculate the number of biodiversity units provided by habitats within the Yorkshire Water estate for 2015 and 2019. For the interim years it was assumed that there was a constant linear change in the number of units each year.

Total number of suppliers (no.)

This metric is defined as the total number of suppliers that have invoiced Yorkshire Water and that have been paid within each financial year. The figures provided for this metric are derived from a supplier payment

database within Yorkshire Water that provides records of all invoices paid out from the organisation. All miscellaneous payments that were not attributable to a particular supplier on the database were excluded from the estimates. The supplier database was updated in 2019/20 to a new system which may have created some duplicates for supplier records in that year. The data was not checked for duplicates of the same supplier appearing more than once in the database under slightly different names (e.g. Ltd vs. LIMITED).

Number of new apprentices each year (no./yr)

This metric is defined as the number of new apprentices taken on each year by Yorkshire Water that were recruited externally via a formal recruitment process. The figures provided for this metric are derived from an internal apprentice reporting process within Yorkshire Water that provides a record of the number of new external recruits each year. It is important to note that these figures are different to the numbers of apprentices recorded in the Yorkshire Water ARFS which also include apprenticeships started by internal staff.

Number of participants in education programmes (no./yr)

This metric is defined as the total number of individuals recorded as participating in educational programmes run by Yorkshire Water each year. The figures provided for this metric are derived from an internal educational reporting process within Yorkshire Water that provides estimates of the total number of events and participants each year. There is a plan to update this process in future years to measure the total hours of attendance rather than the numbers of participants in order to provide a more accurate representation of the educational impact.