Regulatory Planning and Programme Delivery

Anglian Water

Regulatory Planning in Anglian Water

21st March 2025

Ed Whittaker – Anglian Water

Agenda

- About Anglian Water
- Managing Regulatory Submission
  - Value Framework
  - Cost Estimation using Copperleaf Cost
  - Optimisation – Predictive Analytics
- What next for Anglian Water and Copperleaf?

About Anglian Water

love every drop anglianwater

Our purpose

is to bring environmental and social prosperity to the region we serve through our commitment to

Love Every Drop.

We are geographically the **largest water and sewerage company** in England and Wales

Serving

7 million

people across the East of England and Hartlepool

We operate and maintain

39,248km

of water mains.

Laid end to end, this is further than a trip to Sydney and back

And we operate and maintain

77,300km

of sewers

Laid end to end this is almost **twice around the earth's circumference**

88% have a meter fitted

We employee around **6,000** people, and work alongside a further **3,000** alliance partners and contractors.

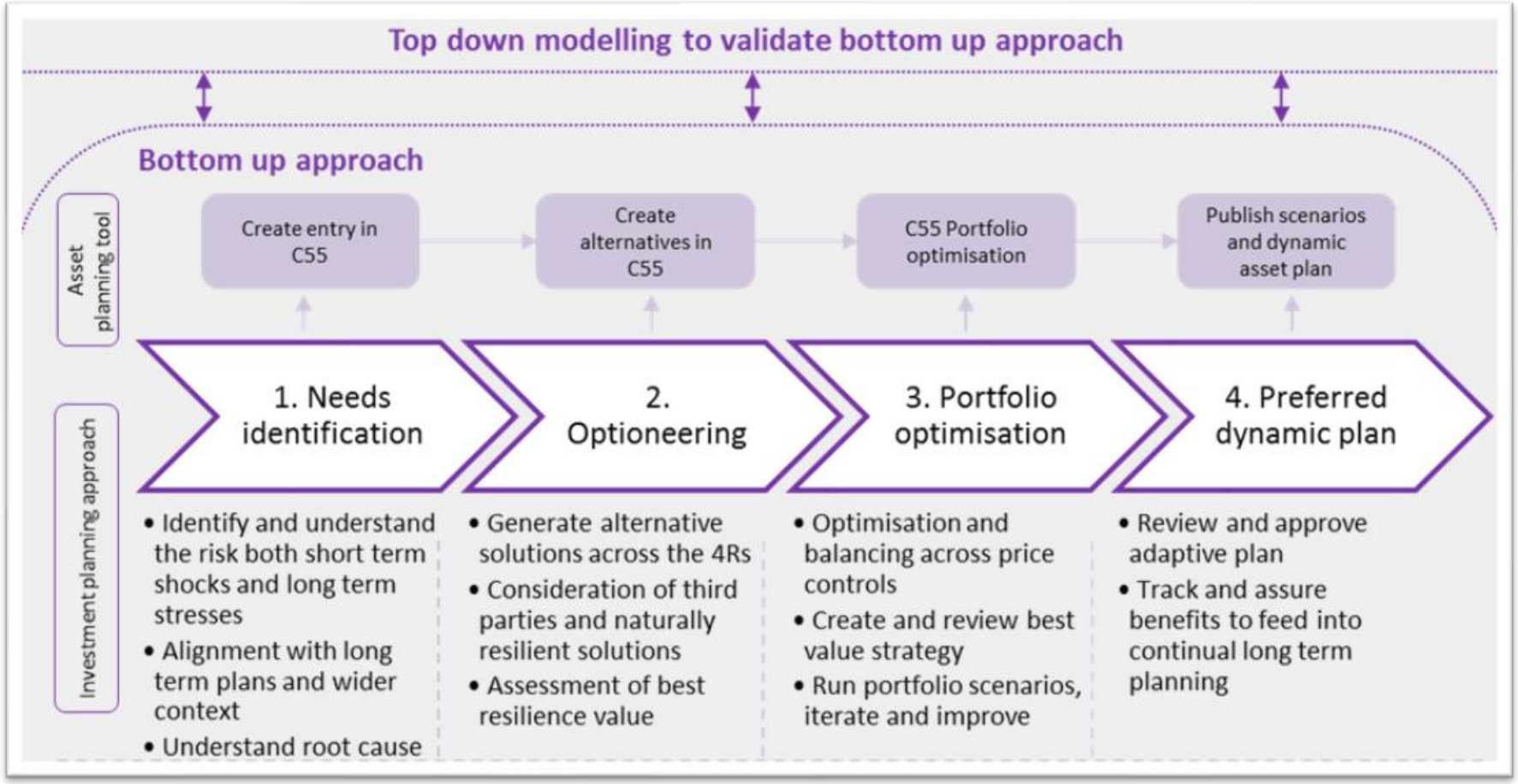
Our AMP8 plan will see us create circa **7,000** new jobs across the region

We pump less water into supply every day now than we did in 1989, despite supplying

26% more properties

Since privatisation in 1989, Anglian Water has invested £16.9 billion improving services in our region.

Our Business – The Price Review

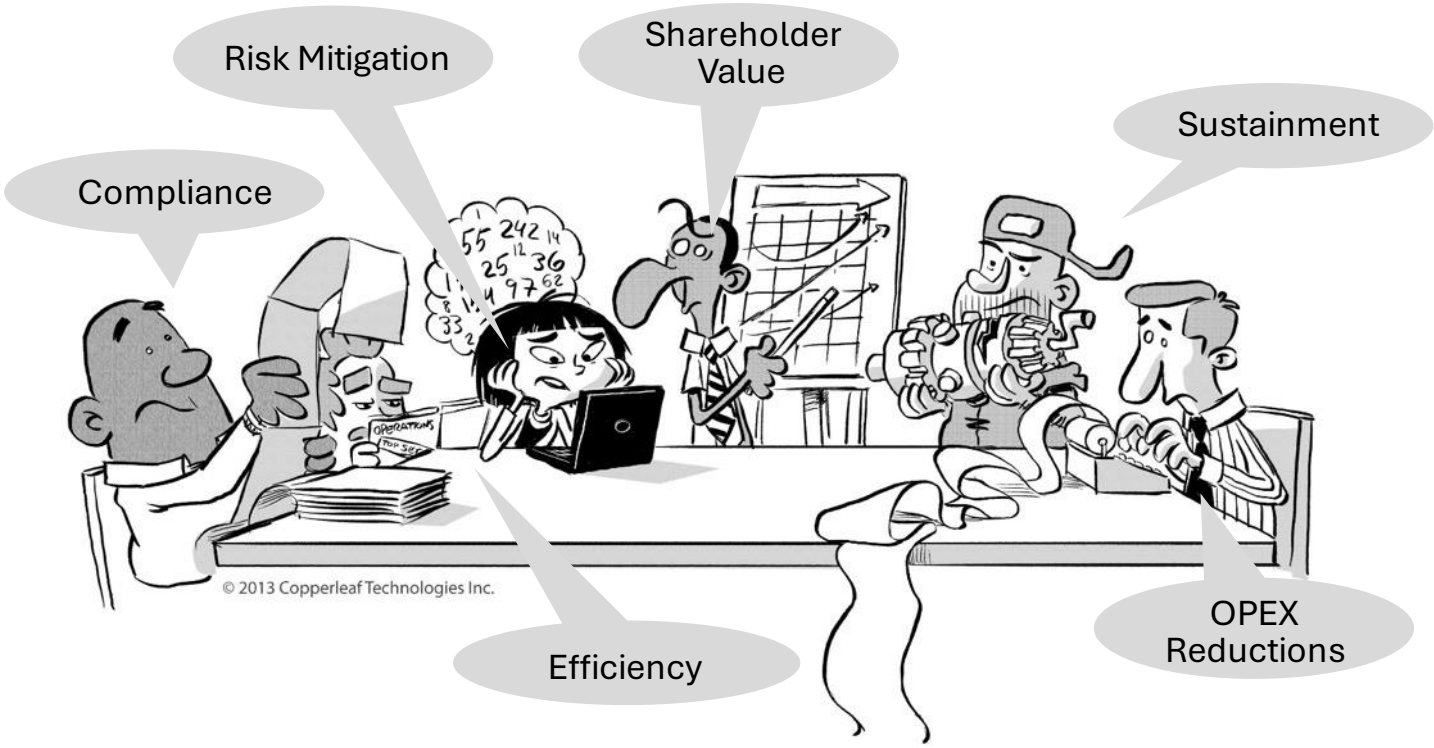


Capital Investment Strategies

Efficient capital investment strategies can optimise resource allocation and improve overall operational effectiveness in businesses.

What is “Value”?

Depends Who You Ask...



Value Framework

- Value is assessed for all investments across the 6 capitals, considering both Societal and Private Value
- Use of a Value Framework enables Anglian Water to make an informed decision, based on value that balance competing constraints

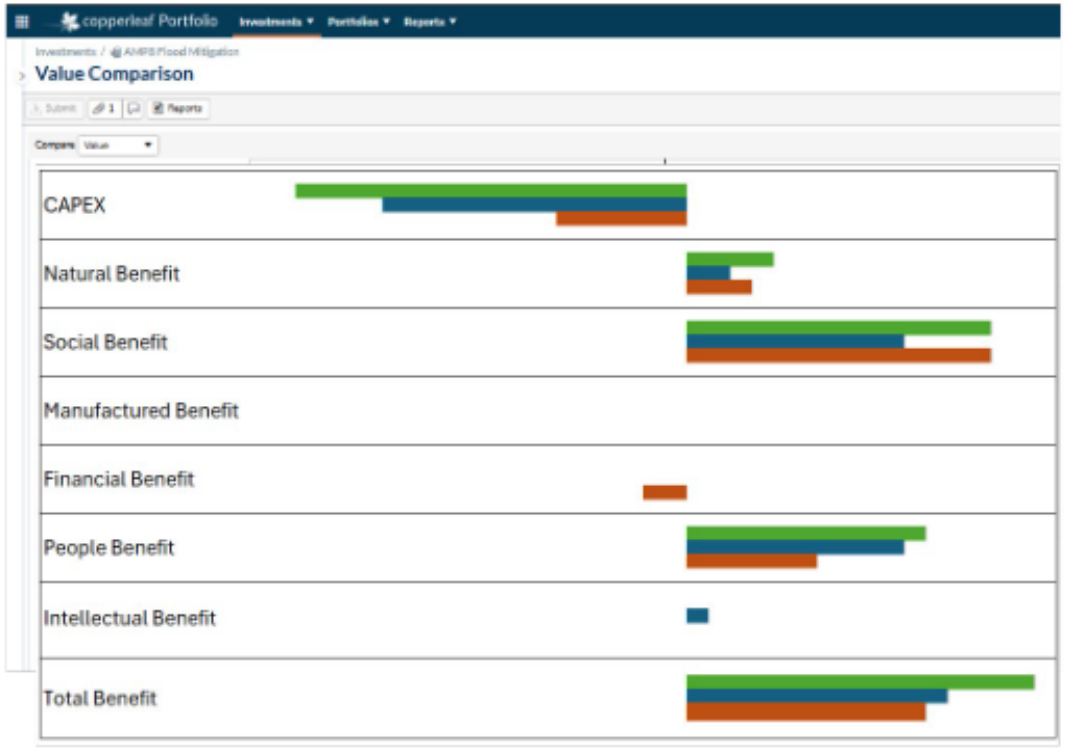
Natural	Social	Manufactured
Pollution	**Water supply**	**Water efficiency**
Category 1-4	Supply deficit Interruptions to supply Low pressure	Potable water leakage Raw water leakage Consumption reduction
Permit failures and discharges	**Water quality**	**First time connections**
WRC quality compliance WRC volumetric compliance WTW discharge compliance	Notices Health and regulatory impact Aesthetic impact DWI prosecution	Developer request water Developer request water recycling Section 101a request
Water resources	**Flooding**	**Business enables**
Over-abstraction Aquifer protection	Internal External Public Areas Dam failure	Information services
Environmental quality	**Customer (BAS and construction)**	**Security**
Bathing waters River water quality Biodiversity net gain Air quality	PR (only for one off cases) Visual Noise Odour Traffic disruption Amenity access Customer experience	Operational Security Cyber Security
Carbon and emissions		**Resilience to climate change**
Capital carbon Operational carbon Process emissions		Resilience to climate change
Financial	**People**	**Intellectual**
Income	**Health, safety and wellbeing**	**New/different ways of working**
Income protection Renewable generation Bioresources Non-domestic income Domestic income	Physical safety (staff and public) Employee wellbeing	Employee productivity Intellectual property utilisation
Opex increase		
Additional activity indicators		

Which project would you do first?

Solution

- Each project is assessed against the relevant Value Measures to support the comparison on a common economic scale

Option 1	Option 2	Option 3
Benefits: Prevents any future flooding, health and safety or pollution incidents	**Benefits:** Reduces the risk of flooding, H&S and pollution to a quarter of original levels **Additional benefit:** improves employee productivity	**Benefits:** Solves the flooding and pollution risk and halves the health and safety **Additional disbenefit:** will be an eyesore in an area of natural beauty
Cost: £1m Capex, £0 Opex	**Cost:** £600k, £5k a year Opex	**Cost:** £250k, £25k a year Opex
Carbon: high	**Carbon:** low	**Carbon:** medium



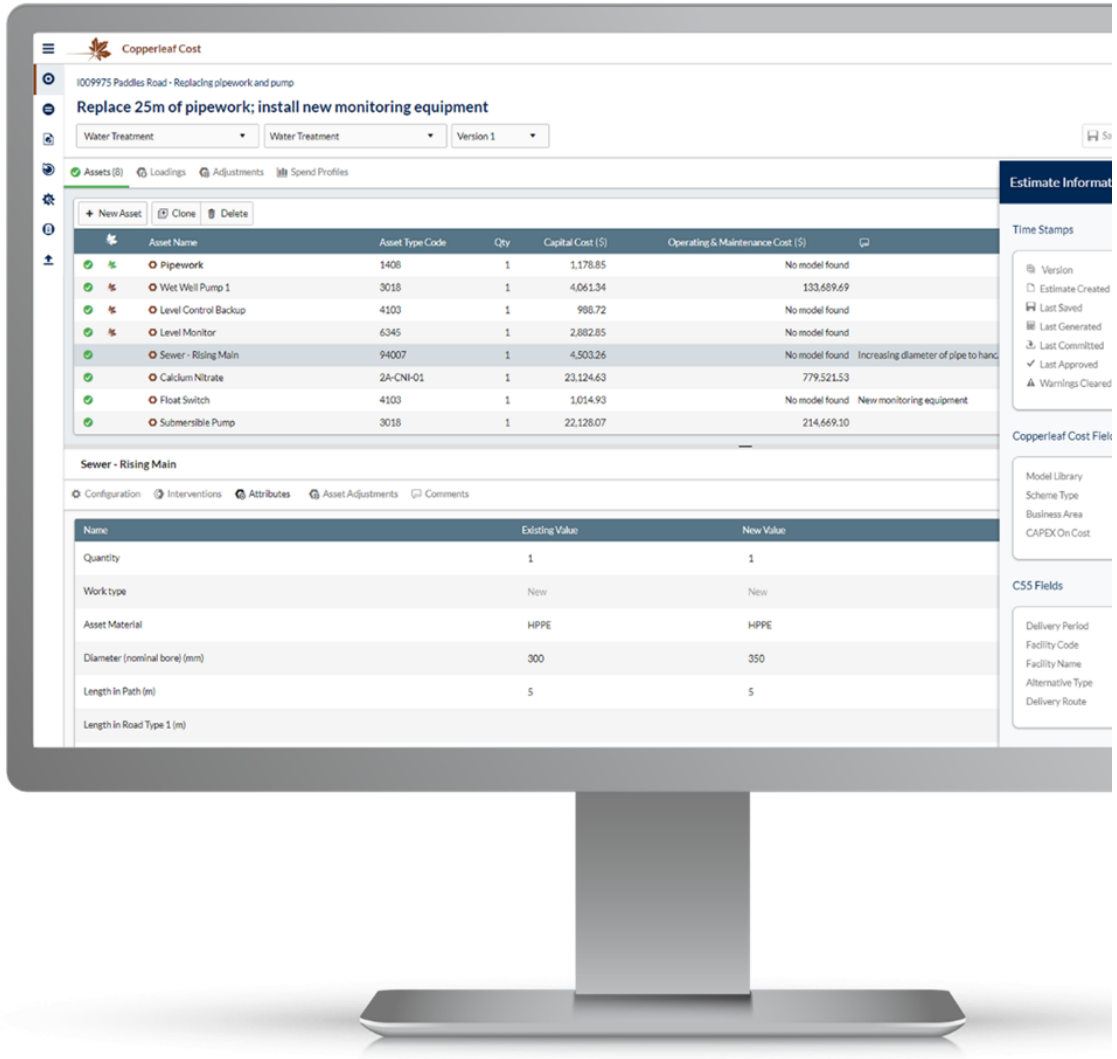
Cost Estimation

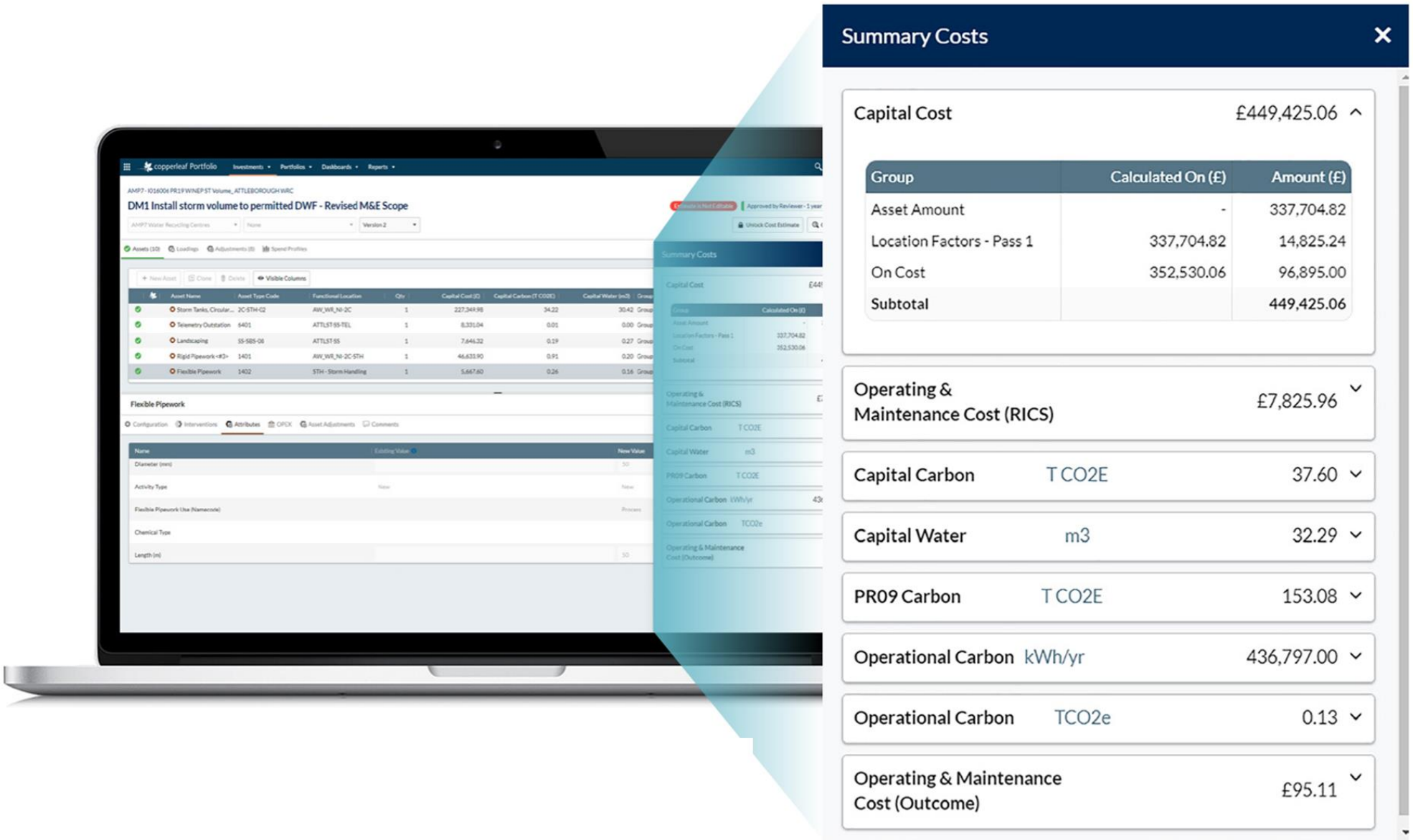
Solution

- Generate comprehensive class 4/3 estimates using parameterized cost models
- Automatically calculate costs of intervening on existing assets within Copperleaf
- Review and approve estimates through built-in workflows
- Incorporates Carbon modelling into estimating process

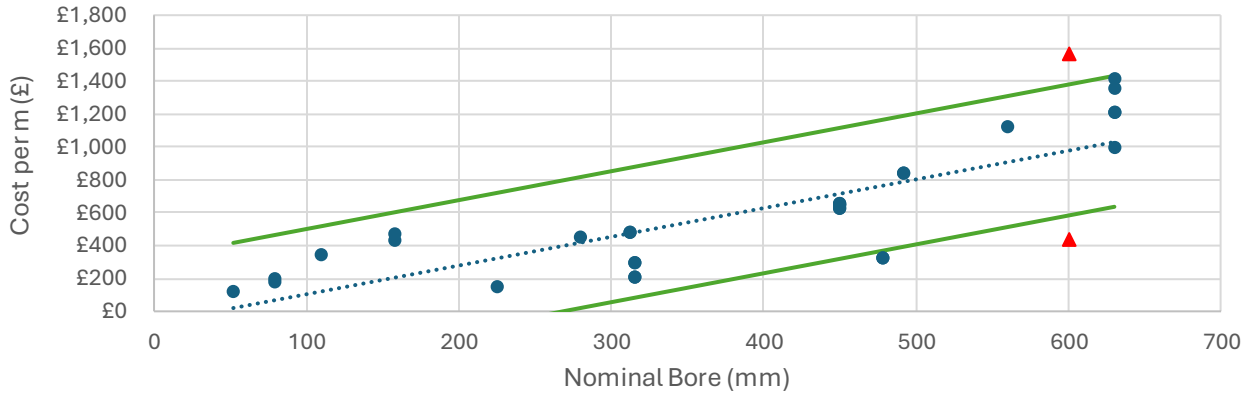
Outcomes

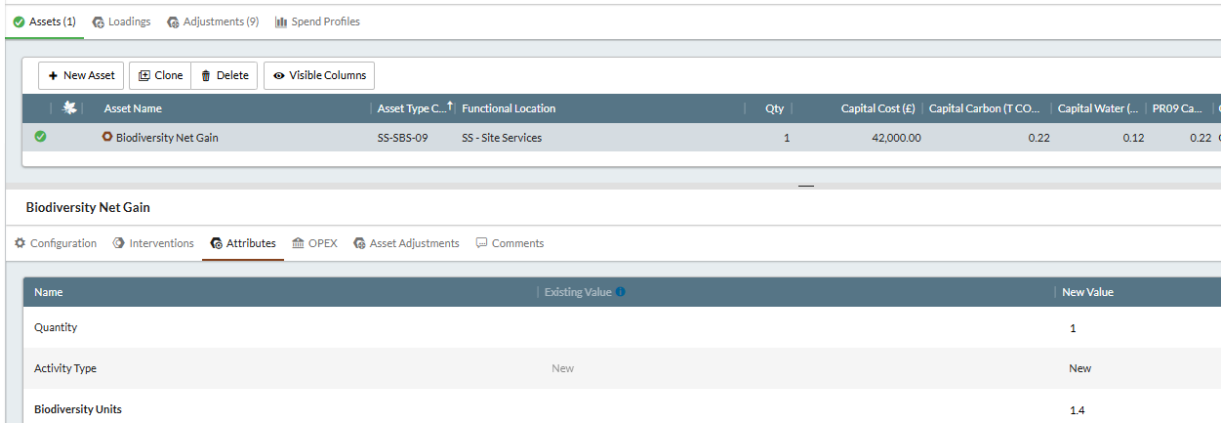
- Supplier alignment across cost profile increases forecast certainty
- All capital projects estimated an assessed for operational and embodied carbon
- Essential part of the business solution to drive down capital carbon by 61% against 2010 baselines

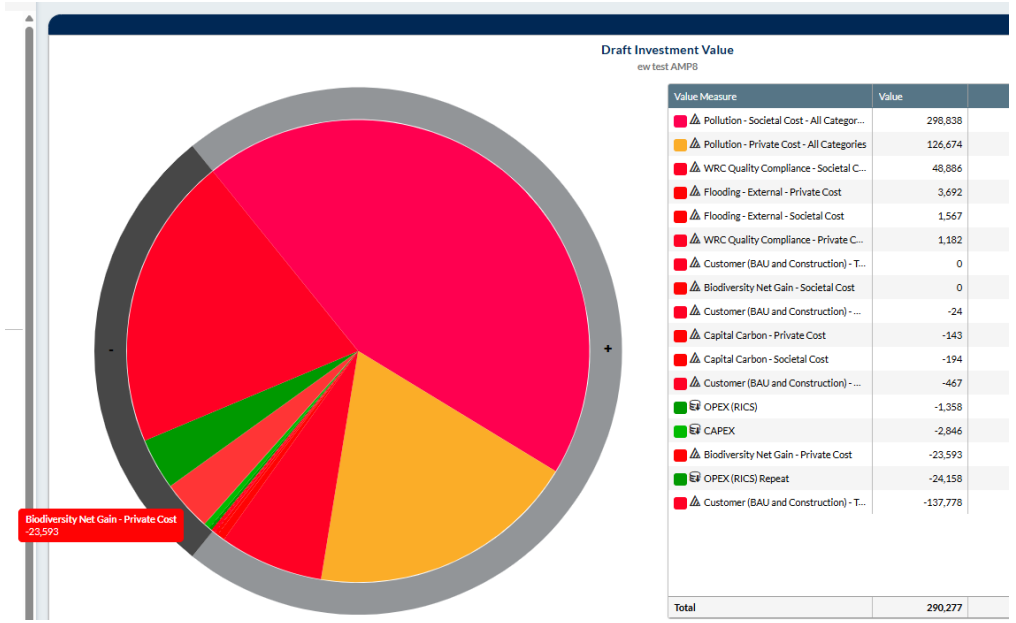



Summary Costs
Capital Cost £449,425.06
Group | Calculated On (£) | Amount (£)
Asset Amount | - | 337,704.82
Location Factors - Pass 1 | 337,704.82 | 14,825.24
On Cost | 352,530.06 | 96,895.00
Subtotal | | 449,425.06
Operating & Maintenance Cost (RICS) £7,825.96
Capital Carbon T CO2E 37.60
Capital Water m3 32.29
PR09 Carbon T CO2E 153.08
Operational Carbon kWh/yr 436,797.00
Operational Carbon TCO2e 0.13
Operating & Maintenance Cost (Outcome) £95.11

Cost Estimation







OFWAT Assessment criteria

Further cost breakdown requested by OFWAT to demonstrate that our costs are efficient and robust

Table 10: Enhancement deep dive cost adjustment criteria

Enhancement criteria grouping	Category	Cost adjustment	Justification
Need	Pass	0%	The need for enhancement is clear with sufficient and convincing evidence for enhancement need.
	Partial pass	10%-80%	Need for enhancement is partly demonstrated but concerns remain due to lack of supporting evidence. Apply bespoke adjustment based on sufficiency of evidence and degree of investment overlap.
	Fail	100%	Possible investment need, but investment is covered under base activities or previously funded. enhancements or no clear evidence for enhancement need.
Best option for customers	Pass	0%	Sufficient and convincing optioneering evidence provided to support selection of best option.
	Minor concerns	10%	Limited options considered but with evidence or range of options considered with limited supporting evidence.
	Some concerns	20%	Limited options considered with limited/no supporting evidence.
	Significant concerns	30%	No clear evidence of options considered.
Cost efficiency[63]	Pass	0%	Sufficient and convincing evidence that costs are efficient.
	Minor concerns	10%	Some cost efficiency criteria met with some supporting evidence.
	Some concerns	20%	Several cost efficiency criteria not met with limited/no supporting evidence.
	Significant concerns	30%	No clear evidence of cost efficiency.
Customer Protection	Pass	N/A	Customer protection proposed covering all costs and benefits.
	Some concerns	N/A	Some customer protection provided but does not cover all the benefits/proposed investment.
	Significant Concerns	N/A	No customer protection proposed.

Cost efficiency – Enhancement expenditure requests should be based on efficient costs with sufficient and convincing evidence to demonstrate efficiency. It must be clear how the company has arrived at its option costs, including supporting evidence on calculations and assumptions, there must be evidence that the cost estimates are efficient, for example using similar scheme outturn data, industry and/or external cost benchmarking. The company must provide third-party assurance for the robustness of the cost estimates.

Regulatory Queries

Further cost breakdown requested by OFWAT to demonstrate that our costs are efficient and robust

Ofwat

PR24 Outbound query

Ref – OFW-OBQ-ANH-216

We are assessing the unit costs for monitors associated to flow monitoring at STWs, PR24 BP reference CWW3.4, CWW3.5 and CWW3.6 and are seeking to understand potential reasons for variations in unit cost for simple meter and complex civil installations (where applicable).

Please provide a breakdown of the CWW3.4 – CWW3.5 and CW following activities for both simple meter and complex civil ir monitors at STWs (as applicable):

- Monitoring equipment purchase
- Monitoring equipment installation
- Operations and maintenance
- Any other activity included in cost breakdown (please commentary)

Please provide a commentary to explain the costs as well as t estimates.

Company Response

Ofwat

PR24 Outbound query

Ref – OFW-OBQ-ANH-186

On p.140 and 141 of your enhancement strategy document (ref. "ANH26 Enhancement strategy to drought&flood.pdf"), you list the following schemes:

- Wicken Resilience (Ely)
- Stuntney WR to Haddenham WT (Ely) Resilience
- CV Regional Overheating Protection RW
- CV - Reg Temp Related Asset Failure WTW
- CV - Region Temp Related Asset Failure TWD
- CV-Condition & Criticality Investigation Water
- "Raw Water Cloves Bridge **Multidriver scheme 50% allocated in Water WINEP**
- AW Raw Water End to End Metering

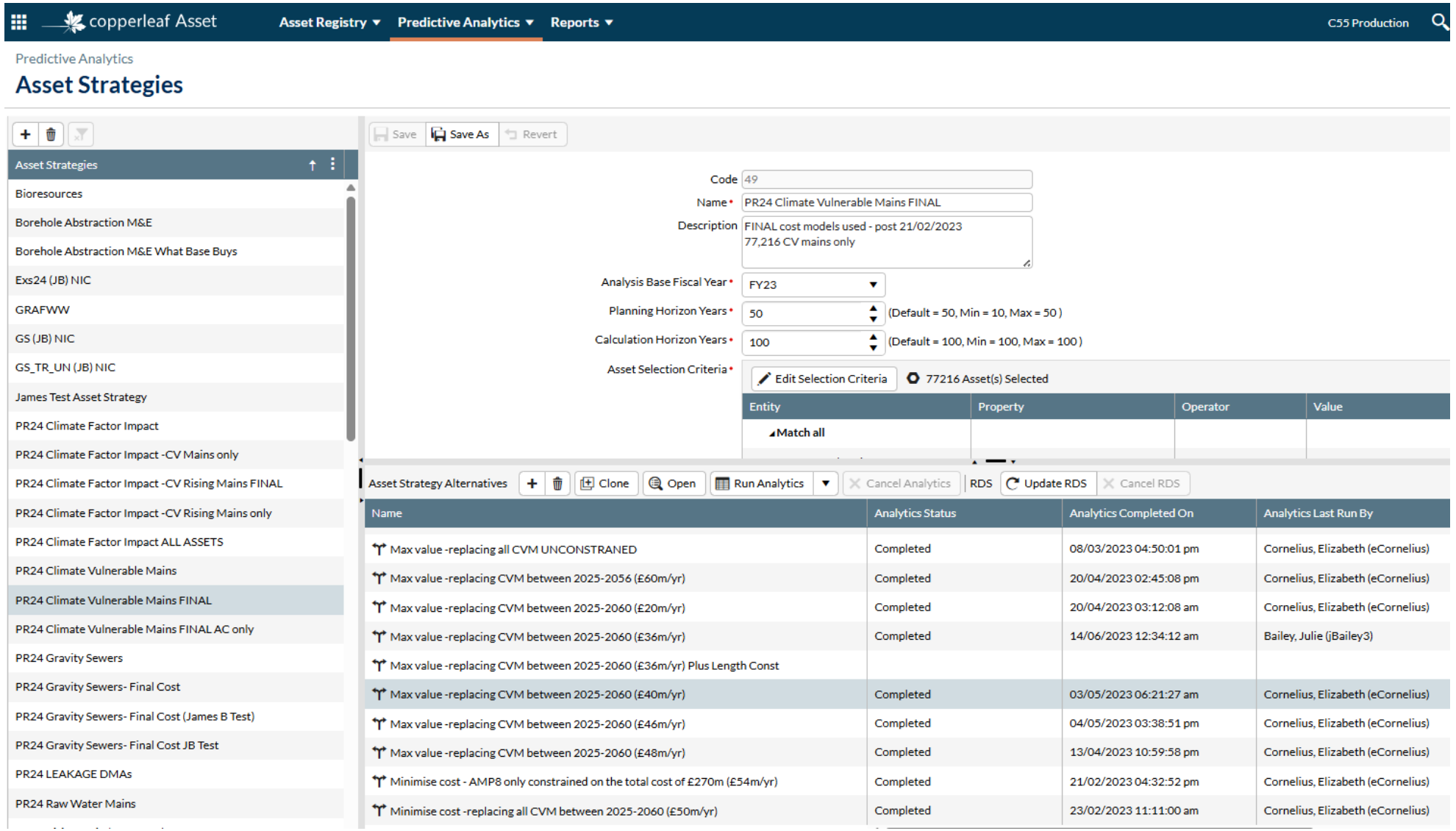
Please provide or explain where the following can be found in your business plan submission:

1. A description of all the schemes listed above, including alternative options considered and the outputs of the cost benefit analysis demonstrating that the chosen options are the most cost beneficial;
2. An explanation of links to other programmes including climate vulnerable mains;
3. A breakdown of costs associated with each scheme (the units of cost provided in table 65 are not clear), which aligns with the overall CW3 AMP8 request, including an explanation of how the costs were arrived at, uncertainties in the estimates and why the costs proposed for those specific schemes are efficient.

Ofwat

Note: Responses are due within 48 hours.

Predictive Analytics



Predictive Analytics – Climate vulnerable mains

Demographics | Results Value Measure | Proposed Projects

Code	530
Name*	Max value -replacing CVM between 2025-2060 (£40m/yr)
Description	Max value - replacing a % CVM between 2025-2060 (£40m/yr)
Value Function*	Private and Societal (PA)
Inflation Rate Set*	Inflation Rate Set - PA Inflation Rate
Resource Pricing Set*	Default Resource Pricing Set
Intervention Type*	Replacement (AUTO solution only)
Earliest New Spend Fiscal Year*	FY26
Repeated Interventions per Asset	
Use Asset Groups	
Stochastic Sampling	Sample %

Cost Modelling (all models)

RPE and Productivity Factors	

Deterioration Modelling (all infra models)

AMP Period	AMP8

Deterioration Modelling (modelled non-infra only)

Refurbishment Ruleset Data Table	

Deterioration Modelling (water infra only)

Climate Scenario	rcp26

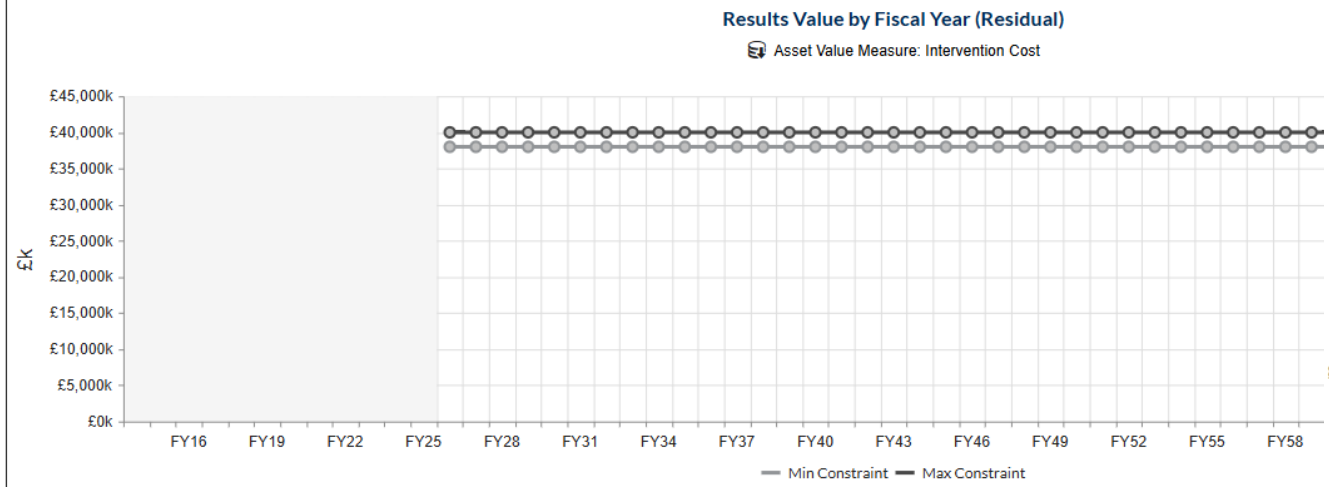
Climate	MAT	Minimum_Diameter	Maximum_Diameter	SS_WC20	Decade	Month	Rate
rcp45	PVC	0	165	5	2030	1	1.050856
rcp45	PVC	0	165	5	2040	1	1.054741
rcp45	PVC	0	165	5	2050	1	1.057213
rcp45	PVC	0	165	5	2060	1	1.061628
rcp45	PVC	0	165	5	2070	1	1.063217
rcp45	PVC	0	165	5	2080	1	1.05739
rcp60	PVC	0	165	5	2020	1	1.046442
rcp60	PVC	0	165	5	2030	1	1.05015
rcp60	PVC	0	165	5	2040	1	1.054388
rcp60	PVC	0	165	5	2050	1	1.055448
rcp60	PVC	0	165	5	2060	1	1.061805
rcp60	PVC	0	165	5	2070	1	1.064277
rcp60	PVC	0	165	5	2080	1	1.058096
rcp85	PVC	0	165	5	2020	1	1.048384
rcp85	PVC	0	165	5	2030	1	1.053682
rcp85	PVC	0	165	5	2040	1	1.060039
rcp85	PVC	0	165	5	2050	1	1.065513
rcp85	PVC	0	165	5	2060	1	1.061981
rcp85	PVC	0	165	5	2070	1	1.069928
rcp85	PVC	0	165	5	2080	1	1.053329
rcp26	PVC	0	165	6	2020	1	1.021403
rcp26	PVC	0	165	6	2030	1	1.025215
rcp26	PVC	0	165	6	2040	1	1.029932
rcp26	PVC	0	165	6	2050	1	1.032918
rcp26	PVC	0	165	6	2060	1	1.031532
rcp26	PVC	0	165	6	2070	1	1.031158
rcp26	PVC	0	165	6	2080	1	1.029399

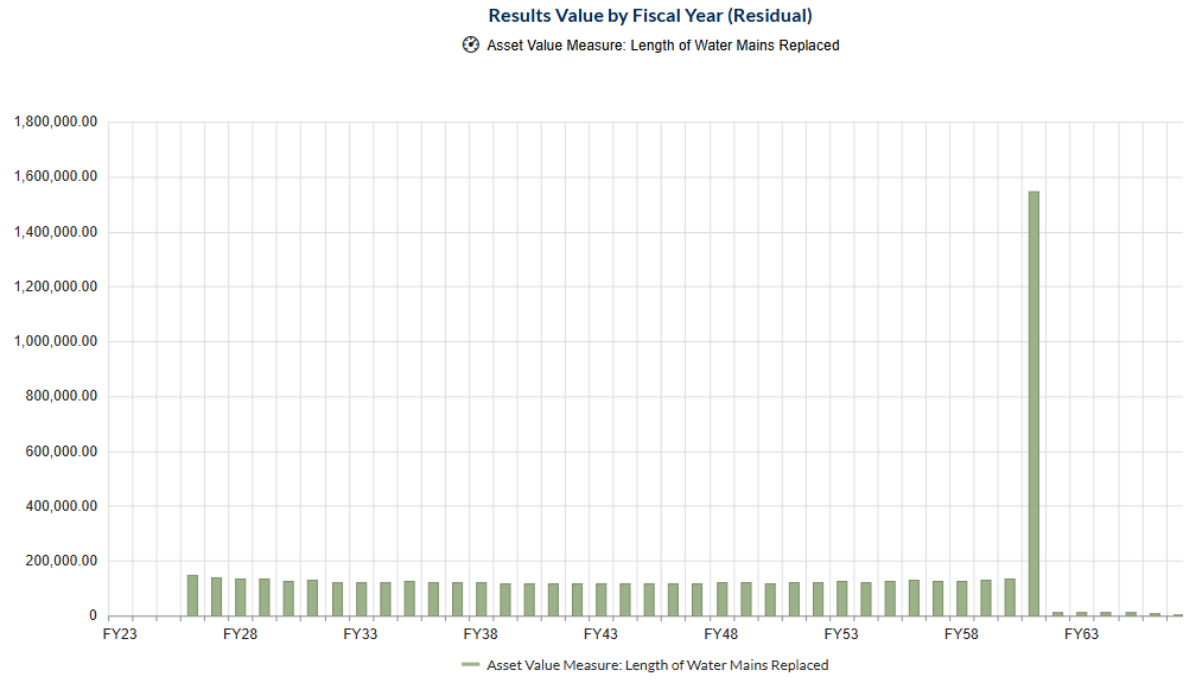
Predictive Analytics – Climate vulnerable mains

Configuration | Constraints | Validation | Results | Demographics | Results Value Measure | Proposed Projects

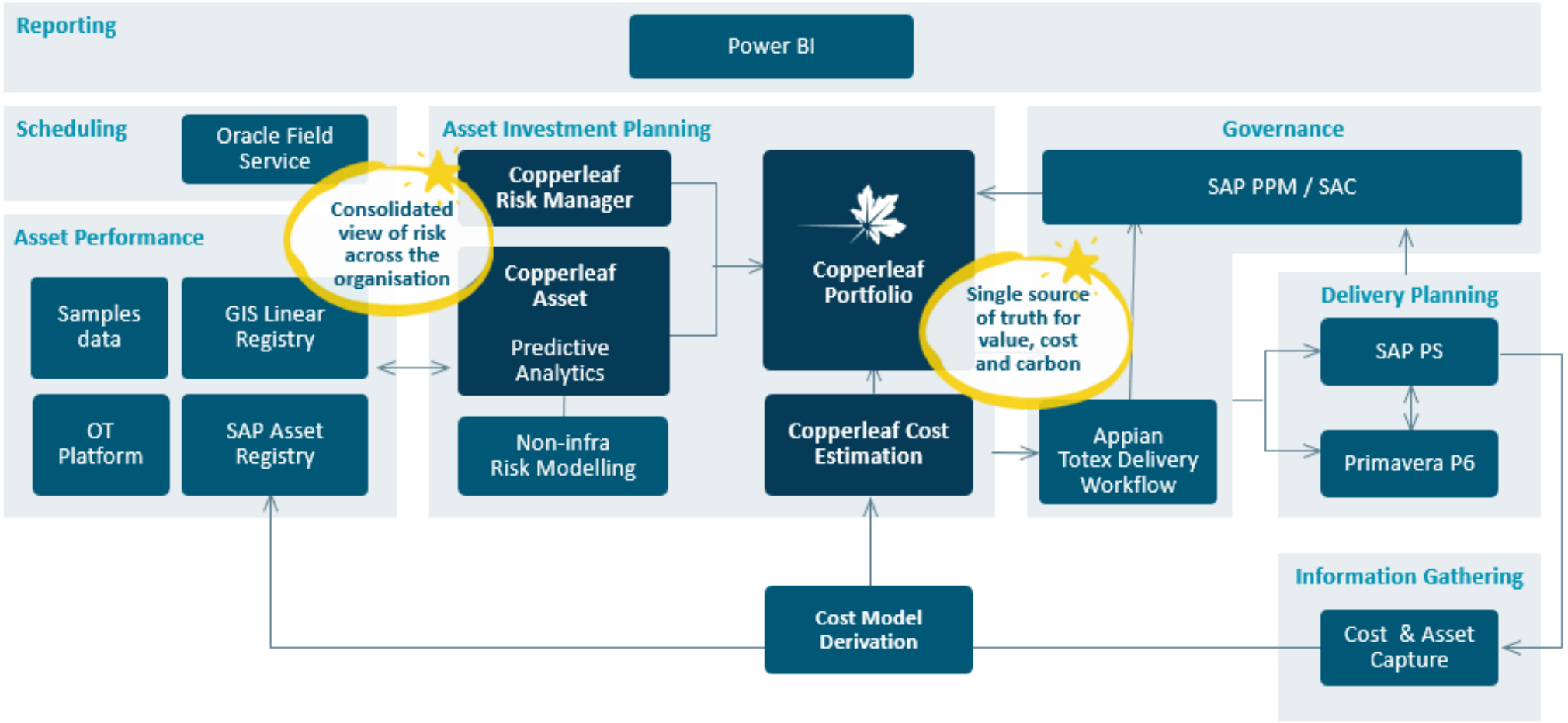
2025 To 2075 | Thousands | Inflated | Propagate Last Min | Clear Min & Max

Asset Hierarchy Node...	Asset Value Measure	Constraint Ty...	U...	FY25 Min	FY25 Max	FY26 Min	FY26 Max	FY27 Min	FY27 Max
	Intervention Cost	Residual	£k			£38,000k	£40,000k	£38,000k	£40,000k



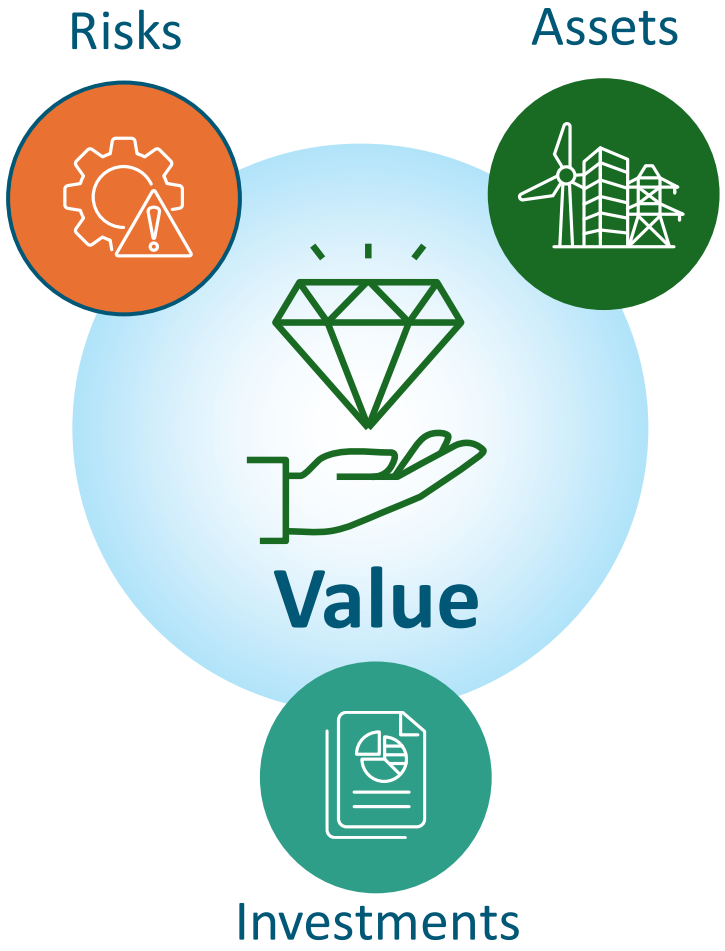


The Copperleaf solution is integrated across the enterprise



What's Next? Risk Manager

- **Identify, manage and track risks** with clarity, consistency, and constancy; in equal consideration of assets, service and strategies
- **Direct line of sight** visibility through the risk lifecycle: risks, controls and mitigations impacting the overall risk profile
- **Optimised risk exposure** with end-to-end management, from identification through mitigation
- **Promoting the right candidate investments** improved risk prioritisation and optimisation enables delivery of greater value for same level of expenditure
- **Improved performance** against regulatory performance commitments/ODI's etc, maximise rewards ad minimise penalties



Thank you for listening