

# Best Value Collaborative Asset Investment Decisions

**John Green**

Anglian Water

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# John Green



## Anglian Water

Largest water and water recycling company in England and Wales by geographic area.

Responsible for:

- Investment Decision Making Processes (Risk, Opportunity & Value)
- Asset Investment Processes

Experience:

- Led AW to ISO55001 certification
- 14 years in Asset Management
- Facilitation expert

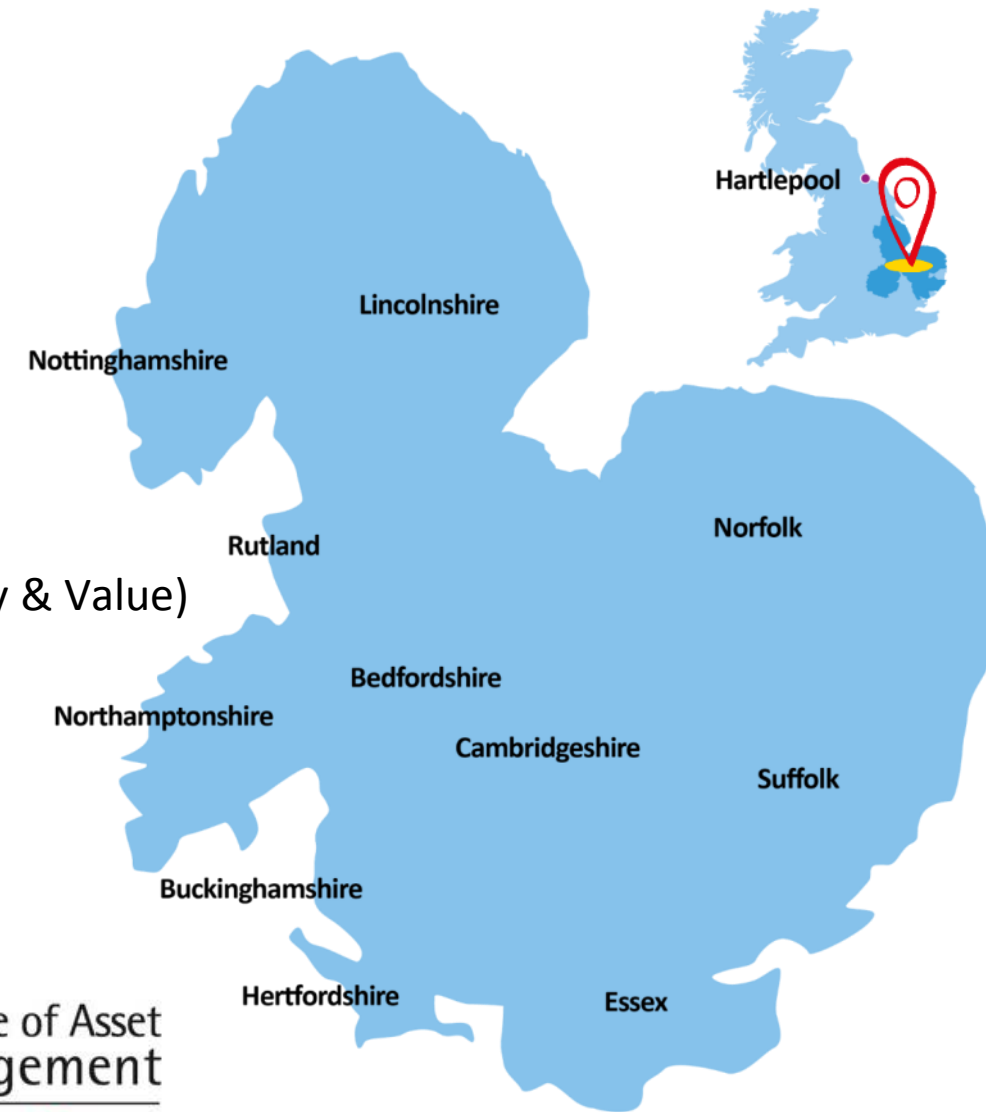
## Institute of Asset Management

international professional body for whole life management of physical assets

- Former chair, NxtGen
- Council Member
- Awards committee



Institute of Asset Management



# Why best value?

We all work in challenging environments...



Climate change



Extreme Weather



Financial Constraints



Customer Expectations



Regulatory Demands



Population Growth



Cyber Security



Changing Markets

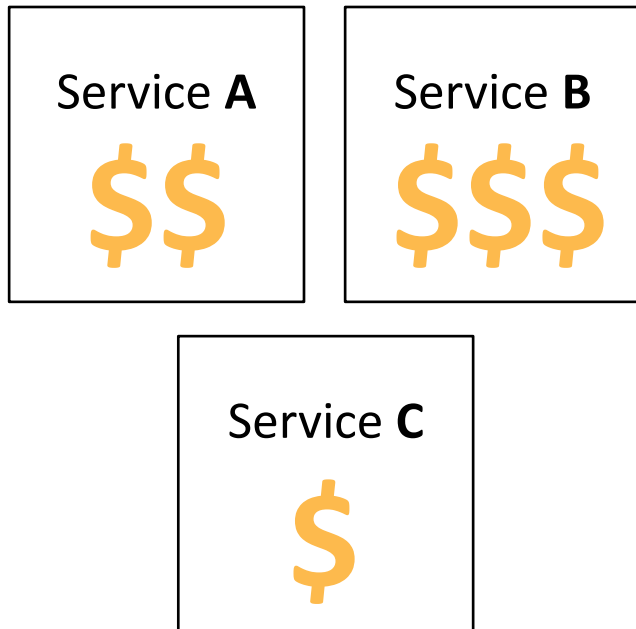
We need make our money go as far as possible...

Benefitting customers, regulators, shareholders and partners

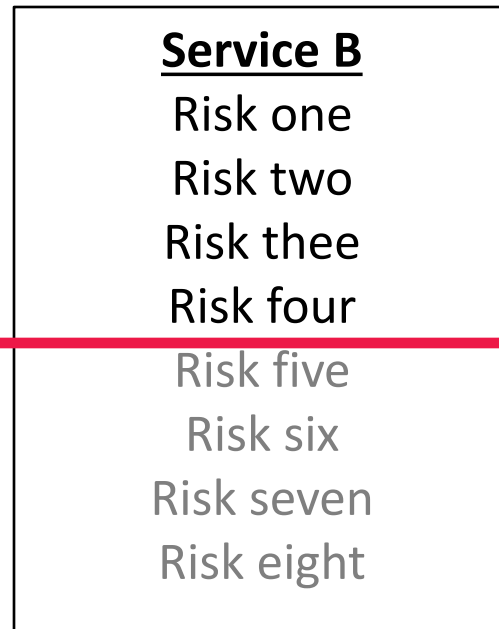
# Investment Decisions

We have lots of decisions to make...

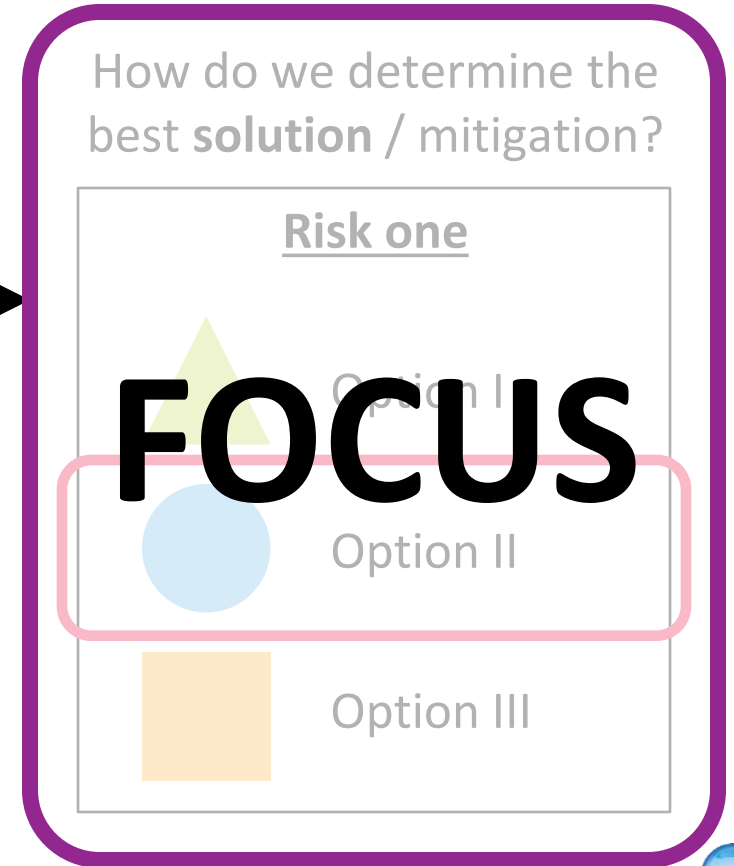
Which **portfolios** of work do we invest in?



Which **risks** do we deal with first?

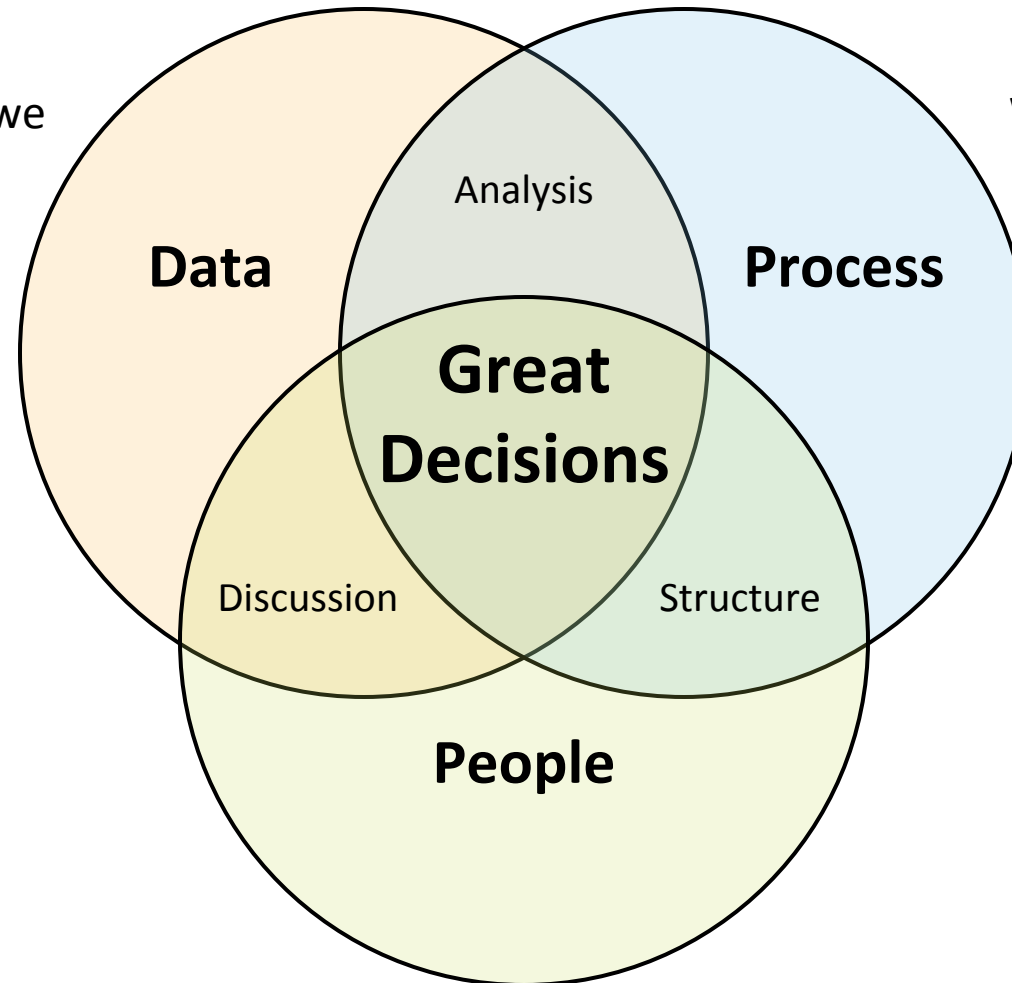


How do we determine the best **solution** / mitigation?



# Ingredients for great decisions

What **information** do we have and need?

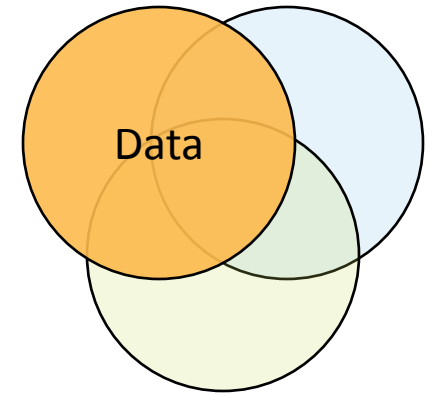


What are the **steps** to make the best decision?

Who do we involve?

# Data

Decisions are only as good as the data behind them...  
What information do we have? What do we need?



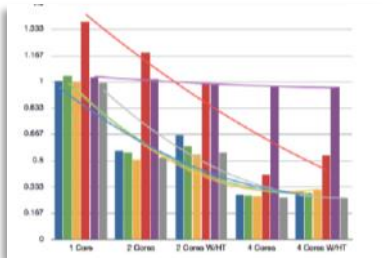
## Contextual data

- Where is the service affected?
- Interconnecting asset systems
- Geographic features
- Demand changes



## Asset data

- Physical layout and location
- Attributes, age, condition
- Size and capacity



## Performance data

- Service and Asset performance.
- How are the assets actually performing vs how should they be performing?



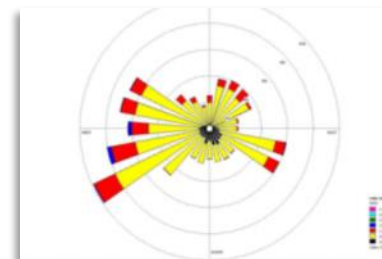
## Events

- Historical or predicted service or asset failures.
- Alarms, shutdowns, near-misses



## Life-Cycle activities

- Actual vs recommended maintenance activities
- Refurbs / renewals
- Operating changes

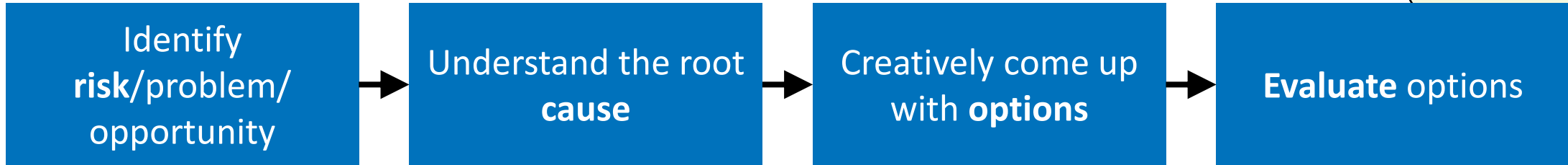
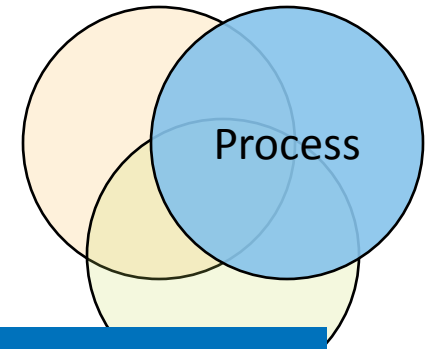


## Other relevant data

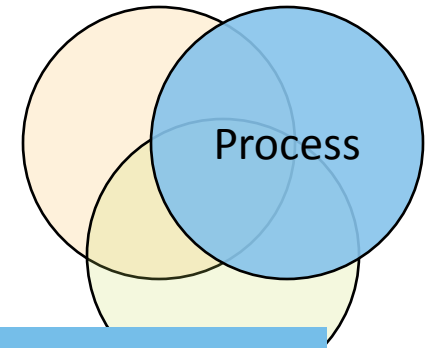
- Growth prediction
- Seasonal activities
- Weather trends
- Land usage

# Process

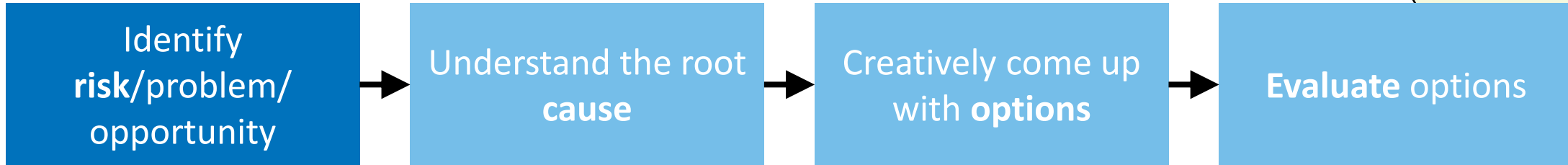
What's the process for making a great value decision?



# Process



## What's the process for making a great value decision?



### Get clarity on the problem/risk that we want to solve

**What** is the issue? Focus on the **service**, not just the asset

**EXAMPLE:** This broken pump means that **customers will be without water**

Explore the detail, use the data...

- **Where** are the customers?
- **When** will they be affected and how often?
- How many? For how long? (**extent**)

Develop a way of expressing the service impact in \$\$\$

- This will help scale risk, make decisions and prioritise investments

**Risk = Impact** (extent in \$\$) x **Frequency**/likelihood (when)

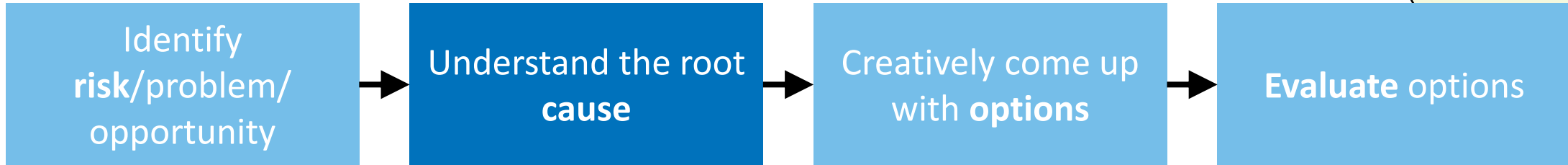
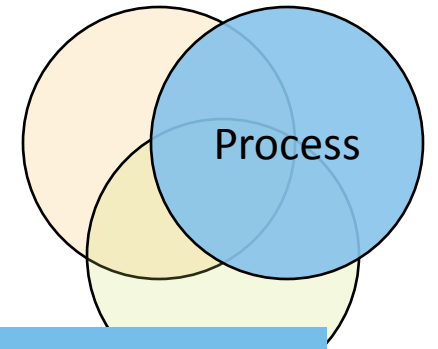
Problem Definition	
<b>What?</b>	No water
<b>Where?</b>	Peterborough
<b>When?</b>	Mornings, twice a year
<b>Extent?</b>	10k houses, 3 hours

Service Failure	Impact	Freq (p/a)	Risk
No water	\$100k	2	\$200k



# Process

## What's the process for making a great value decision?



### Understand the real causes so that we can develop effective solutions

- Our brains have a tendency to jump to conclusions and solutions.
- Root cause provides a systematic approach to understanding the causes of problems

Start with the problem:

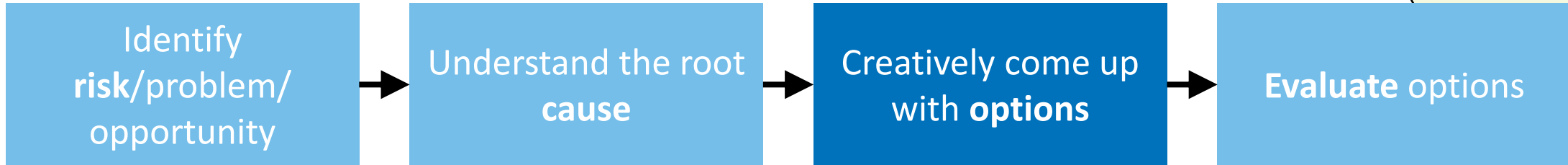
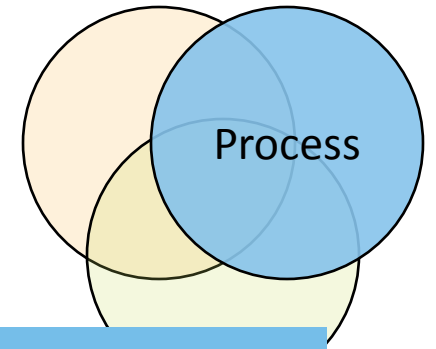


ASK: “What causes that?”

Keep asking “What causes that?”

# Process

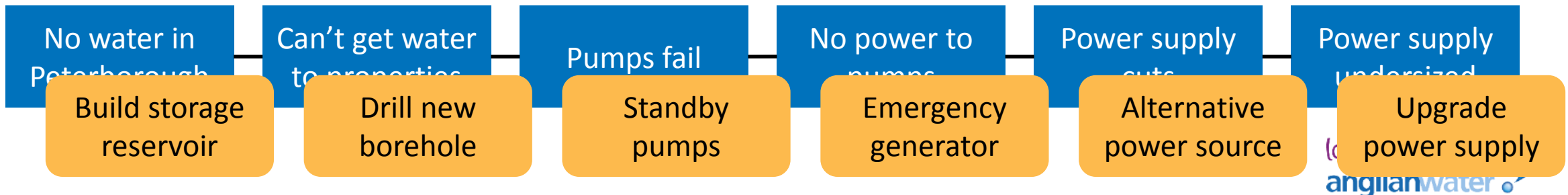
## What's the process for making a great value decision?



### Come up with a range of options to solve the problem

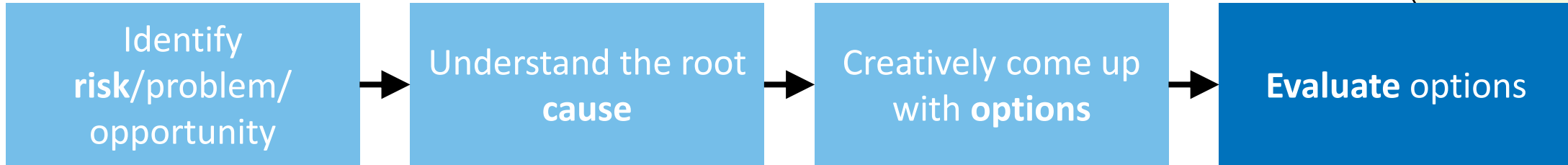
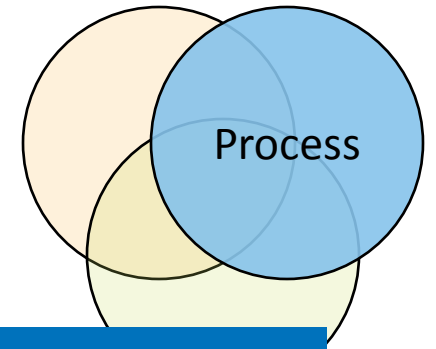
- Use tools / thought exercises to stimulate **creativity**.
- Focus on solving the **risk/problem**
- Think beyond the typical Capital solutions, **consider maintenance or operational solutions**

The causal diagram is a great place to start...



# Process

## What's the process for making a great value decision?



### Choose the best value option...

For each option:

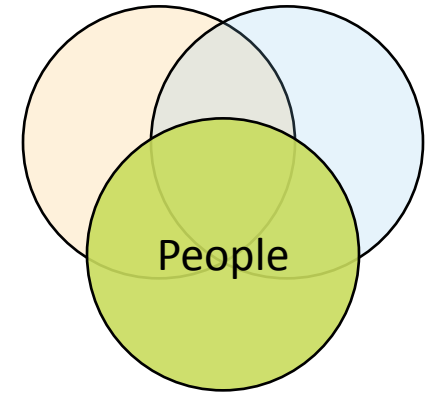
- Consider the **Whole Life Cost** – Capex, Opex, future replacements
- Consider the **benefit** – how much risk will this option remove?

Option	Capex	Opex	Whole Life Cost	Base Risk	Residual Risk	Risk Benefit	Value Indicator
Upgrade power supply	\$25k	\$10k	<b>\$250k</b>	\$200k	\$50k	<b>\$150k</b>	<b>1.7</b>
Standby Generator	\$50k	\$5k	<b>\$200k</b>	\$200k	\$10k	<b>\$190k</b>	<b>1.1</b>

- Calculate **value**
  - One method is a simple cost/benefit calculation
  - The lower the number, the better value!

# People

Groups make better decisions than individuals, how do we effectively collaborate and consider all perspectives?



Get the **right people** together who know about the issue...

Operations

Asset Management

Asset Planning

Delivery

Voice of Customer

Modelling

R&D

Other Experts

Create the right **behaviors**

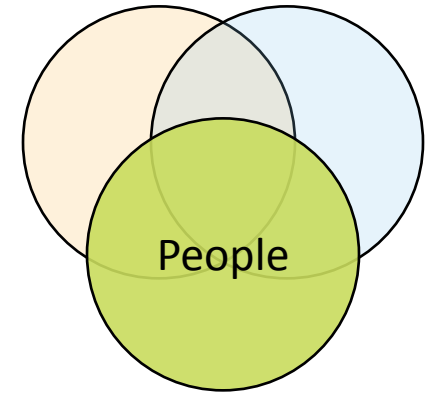
- TIP: Ask the stakeholders “**How do we need to be to make a good decision?**”
- Help them create a behavioral contract
- Work with **rapport** and constructive **conflict**

Come to an agreement as a group

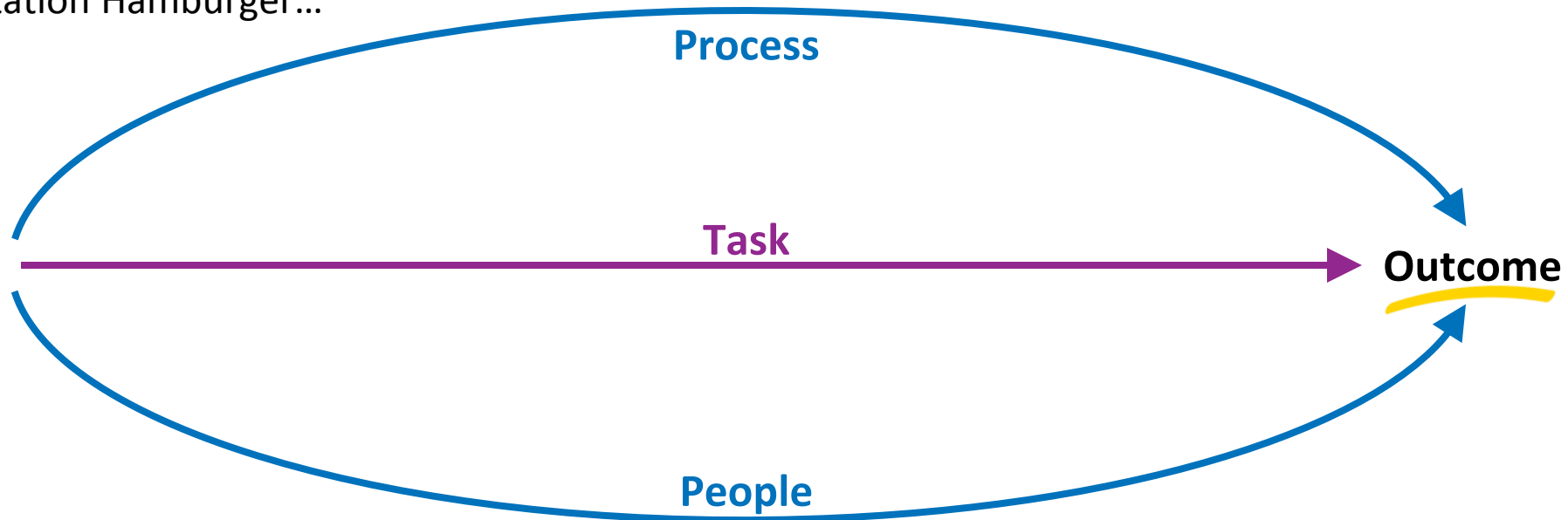
**Facilitation** is crucial...

# People

Groups make better decisions than individuals, how do we effectively collaborate and consider all perspectives?



The Facilitation Hamburger...



The stakeholders focus on the **task**

The facilitator is focused on:

- Ensuring the **process** is followed and,
- The **people** are engaged and contributing

Together they will reach the **outcome**

# Thank you

## Questions...

