



Success Techniques in applying Water Loss Strategies for Financial Benefits
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Chair - IWA Water Loss Specialist Group -

Hello, I have always been interested in what is happening below the surface? So I either fish or find leaks !

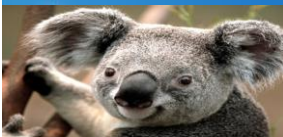


Introduction

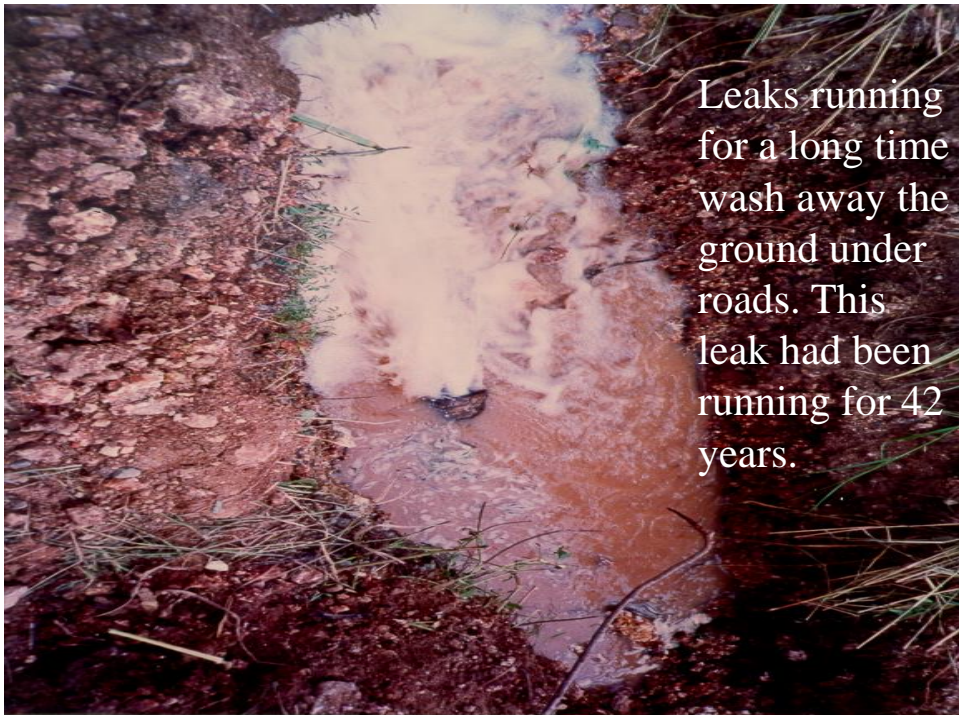
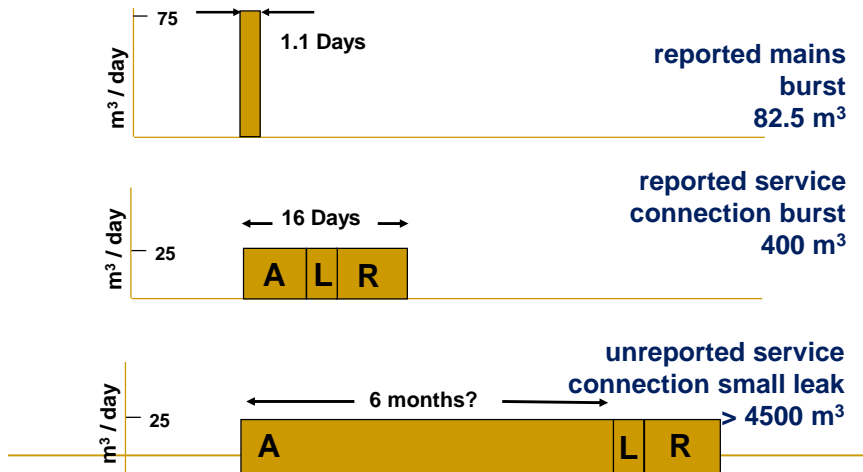
- The presentation will start with a vision of the impact of leaks, followed by an explanation of why reducing Water Losses always has a financial reward.
- How do I know?
- Thinking differently to solve problems
- What you need to know to make water and financial savings
- IWA action plan and world regionalisation



The Impact of leaks and water losses



Bursts with high flow rates don't produce the largest volumes of Real Losses! Run time is a key factor.



Leaks running for a long time wash away the ground under roads. This leak had been running for 42 years.





Why Water Loss Reduction always has a financial benefit

- It impacts on every part of the business
- Less Treatment needed, less operation finance needed, debt reduced, depreciation reduced, existing water resources last longer without the need to supplement, Operational cost reduces, Capital deferrals occur, asset life is extended, distribution knowledge is increased, organisational speed occurs, intelligent understanding, measurement knowledge improves, and impacts on Management Success Planning and all Corporate Decisions”



- It impacts on profitability, less service interruptions, water quality improvements via less contamination, environmental excellence, and very importantly it is politically attractive.



All four of these national leaders supported the need to reduce water losses



How can I be certain of all this?

- I have specialised in this topic for over forty years, and managed water companies all over the world, including developing countries and developed countries, small water companies and large corporations.
- The point I wish to make with saying these things, is that everywhere I have worked , I have proved there are both water and financial savings to make.



Does this work everywhere?

- Yes
- These are the countries I have worked, and proved savings:
- England, Solomon Islands, South Africa, Uganda, USA, Tonga, PNG, Vanuatu, Colombia, Brazil, Malaysia, China, Italy, Australia, New Zealand, Samoa, Canada and Tanzania.
- Many countries, and both large and small water businesses, all have shown potential savings.



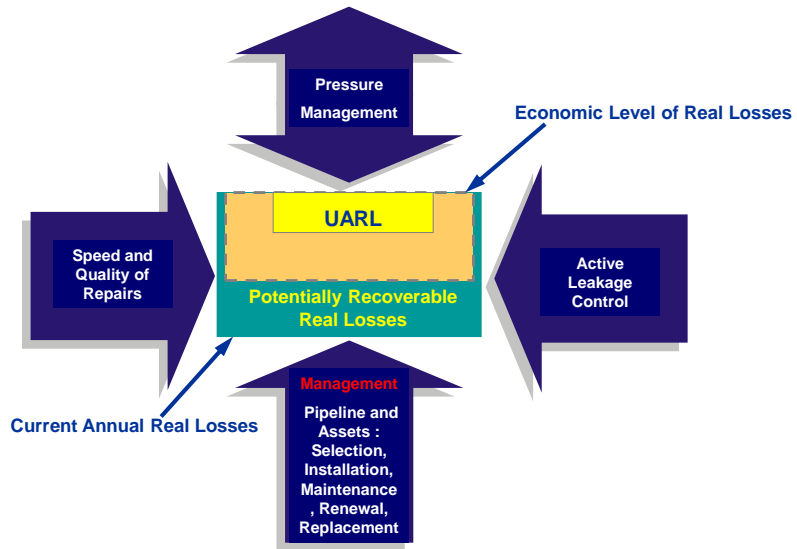
A Plan to reduce water losses on a new project

- Learn the existing planning schemes and finances, and then do an IWA Water Balance
- Have a map of the network and prove how it works with a local leader.
- Measure night time flow, and diurnal flow
- Measure water pressures
- Plan to make the greatest savings first
- Plan a public relations exercise and encourage political support for the water business
- Implement IWA water loss reduction strategies



IWA Standard Water Balance - Step-by-Step -

System Input Volume	Authorised Consumption	Billed Authorised Consumption	Billed Metered Consumption	Revenue Water	
			Billed Unmetered Consumption		
	Water Losses	Unbilled Authorised Consumption		Unbilled Metered Consumption	Non Revenue Water
				Unbilled Unmetered Consumption	
		Apparent Losses		Unauthorised Consumption	
				Customer Meter Inaccuracies	
		Real Losses		Leakage on Transmission & Distribution Mains	
				Leakage and Overflows at Reservoirs	
	Leakage on Service Connections up to metering point				

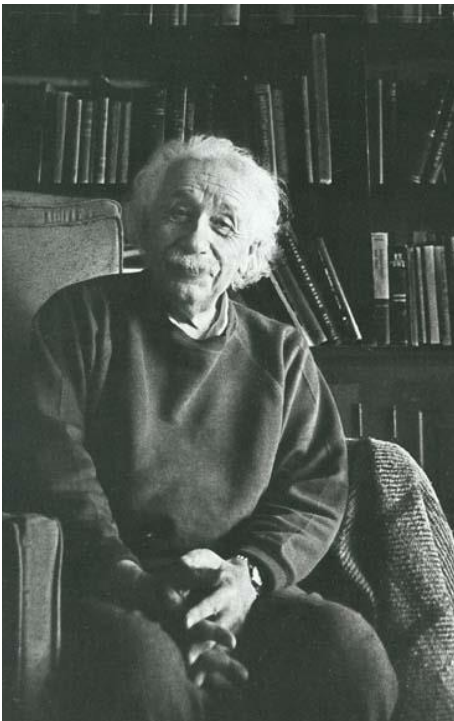


Setting Targets for NRW – which units?



Your Plan

- Most importantly, plan to do things differently than they are at present



“ you can’t expect to solve a problem using the same thinking that created the problem ”



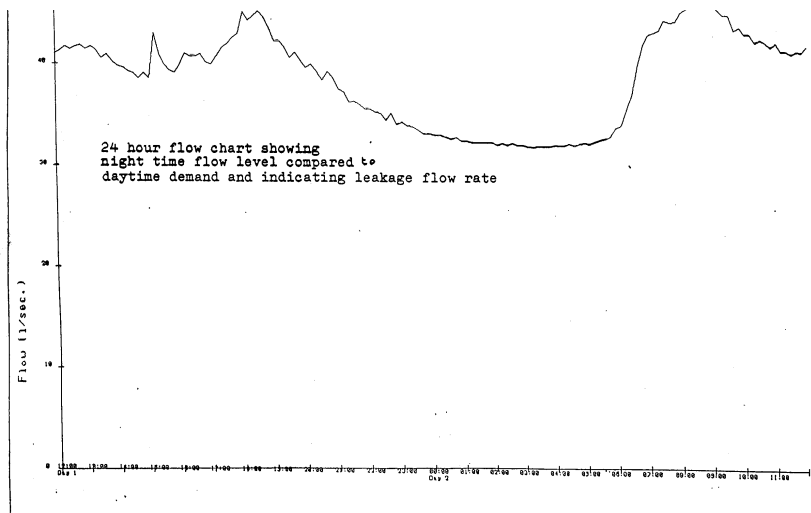
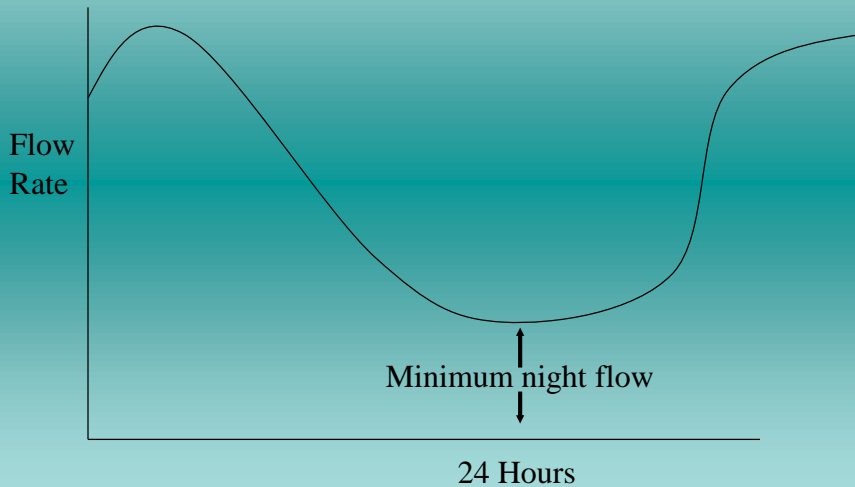
We all saw a road sign, but this African man saw a potential house !

Why do we need to think “outside the Box”

- Because “water loss reduction” has impact on every aspect of running a water business
- And most importantly, the existing strategies have created the present situation



Leakage Levels show up as night time flows



What you sometimes find, without anyone realising !



Understand
pressure and
leakage

LOW PRESSURE = Low Flow from leaks



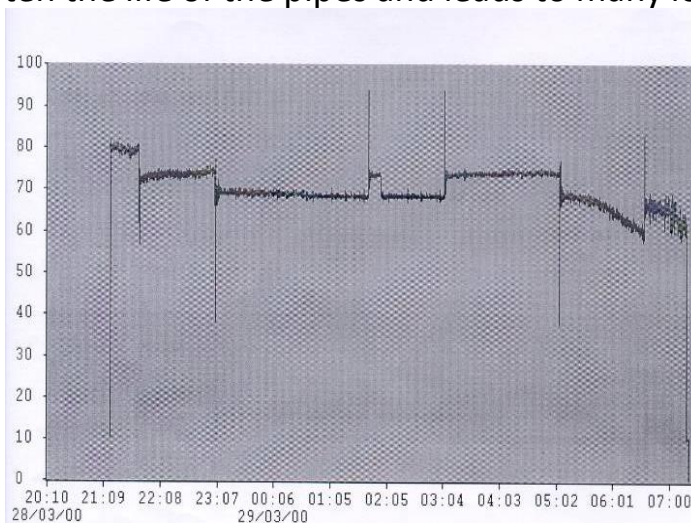
**HIGH PRESSURE
creates leaks and has high flows from them**

What pressure surges can do!!!
(Mains break – if it is a split, then its due to high pressure)



What to do first !!!!

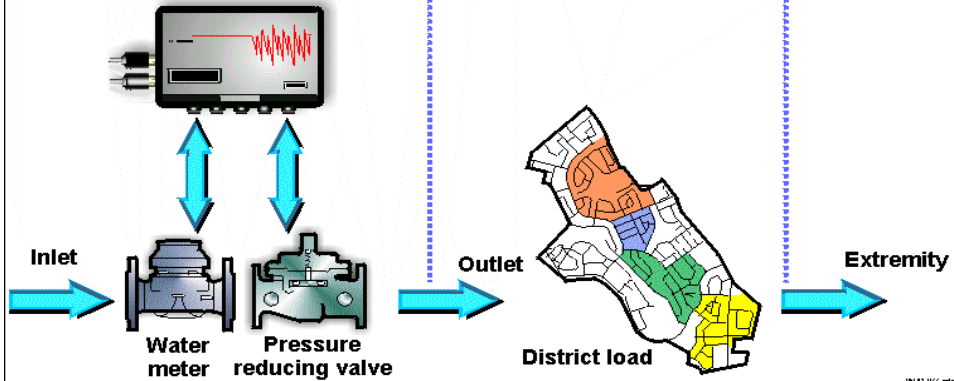
Measure pressure at one second intervals to find these surges, which show in large pressure changes that shorten the life of the pipes and leads to many leaks



Control with a Flow Modulating PRV

WRP
Ronnie McKenzie

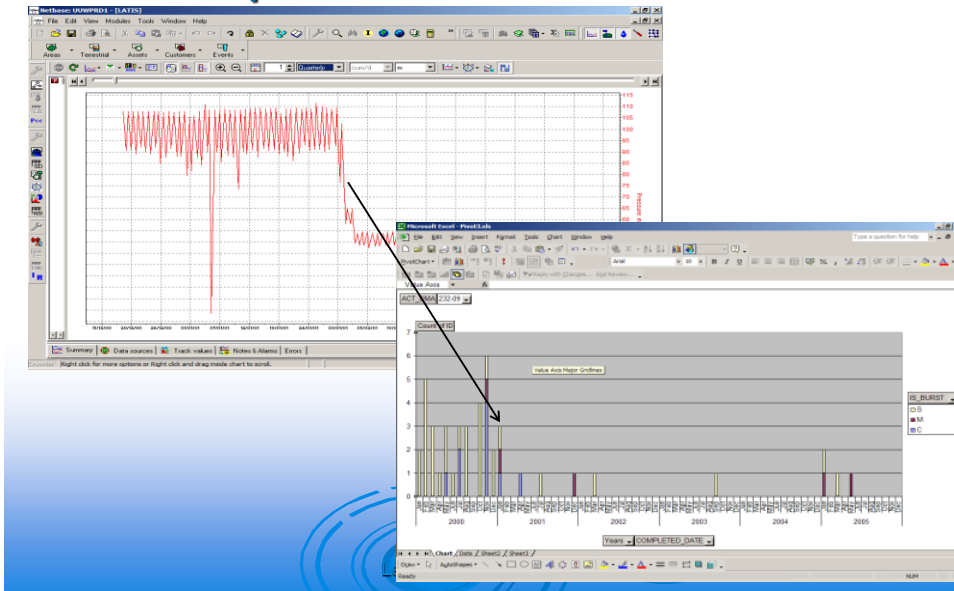
Flow Modulated
Controller



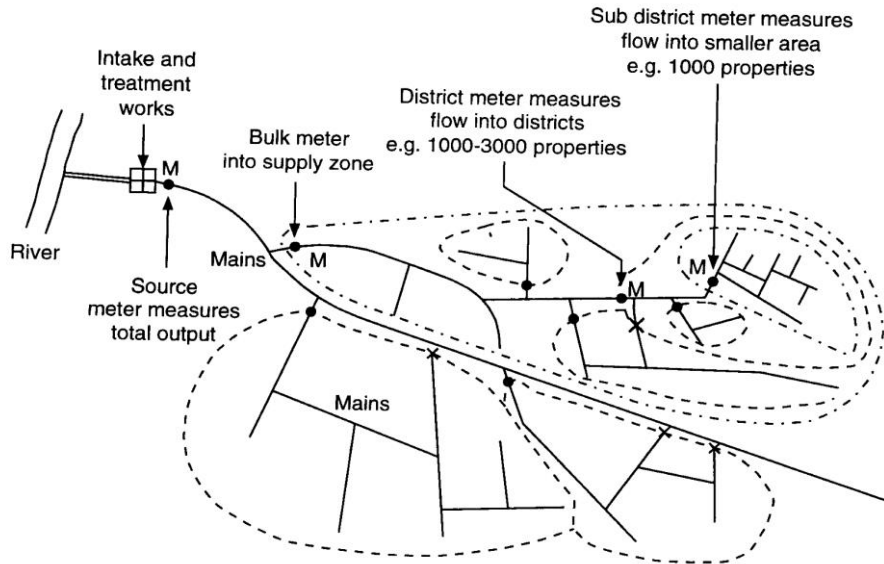
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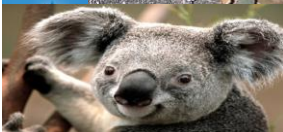
Example – Breaks v Pressure



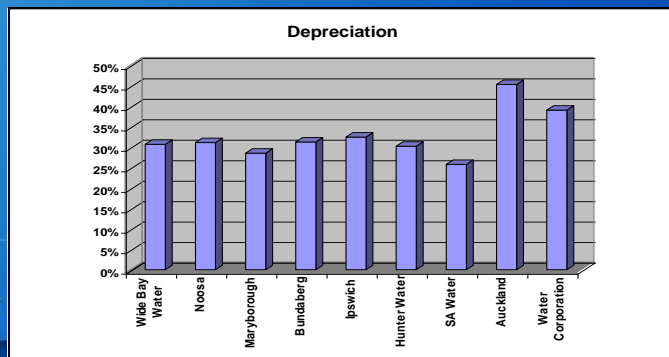
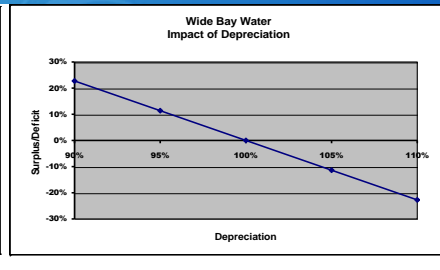
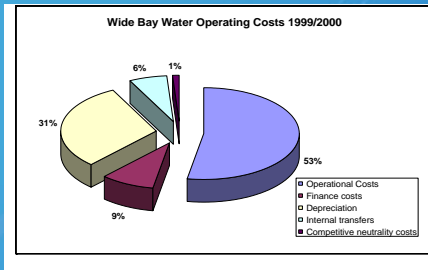
Split the network into metered areas to measure night flows, and the changes as you progress



Find the services where by-pass of meters are happening



IMPACT OF DEPRECIATION



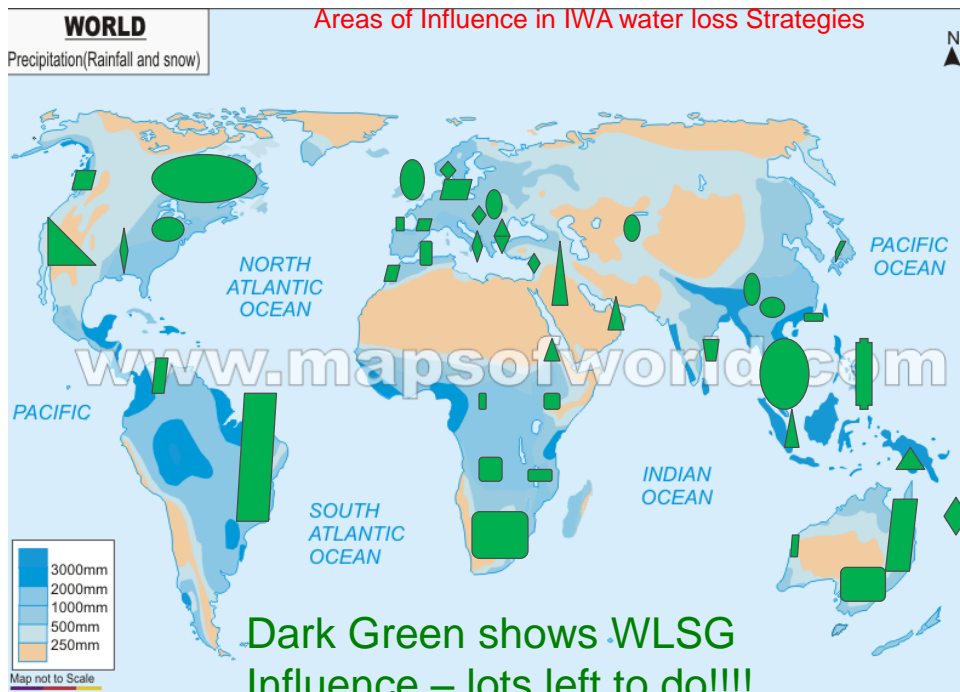
People in the team need good leadership

- Show empathy with their problems
- Spend the time to build respect
- Giving them permission to succeed
- Make sure they are proud of good work
- Be personable, identifying each others strengths
- Clarity and honesty = Trust + motivation



Finalising your plan

- Make friends with people who know the facts about the network, and utilise their knowledge
- Implement flow and pressure measuring systems, then lower the pressure if you can, and re-measure
- Use appropriate leak detection equipment, simple listening sticks in most cases except in large cities.
- Have a good Public Relations plan to include management, politicians and the media
- Demonstrate good leadership and make sure the workforce are proud of every success.




IWA Regions and Representatives


- Europe West ---- Stuart Trow and Jo Parker
 - Europe East -Bambos Charalambos and Marco Fantozzi
 - South Africa-----Ronnie McKenzie
 - Central Africa----- Harrison Mutikanga
 - North America and Canada ---- Ken Brothers + 1
 - Central America and Caribbean --- Paul Fanner +1
 - South America ----- Julian Thornton +1
 - Russia and Neighbouring Region – Stuart Hamilton +1
 - Australasia and Pacific– Tim Waldron +1
 - East and West Asia ----- Roland Liemberger
 - China and Neighbouring Region ---- Malcolm Farley +1
 - North Africa and Middle East– Jan Jansson + Bambos
- Japan is in the Pacific region, so I am your IWA Water Loss representative, but I wish to find a local expert to assist.

Vision

- *“By 2018 water loss methodologies of the Water Loss Specialist group will be implemented by 90% of the water authorities and governments around the world”*

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- The target sounds too difficult to achieve, but Henry Ford had an interesting thought about difficult targets :

**“Whether you think you can or can't
You are usually right” . Henry Ford**



I have given you a plan to save water and have financial benefits- everywhere

**But this is what I will
be doing !!!**

*Success Techniques in applying Water Loss
Strategies for Financial Benefits*



Thank You

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