# Centroc Water Utilities Alliance
# Water Loss Management Toolkit

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# Who & Where is Centroc ?

Centroc Board comprises Mayors, elected representatives and General Managers of Councils across Central NSW

An area the size of Tasmania with about half the population and a bigger the GDP

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# Centroc Water Utilities Alliance

## Strategic Regional Collaboration


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- Compliance with Best Practice
- Cost savings & efficiencies through procurement
- Skilled and sustainable workforce
- Grant funding
- Advocacy

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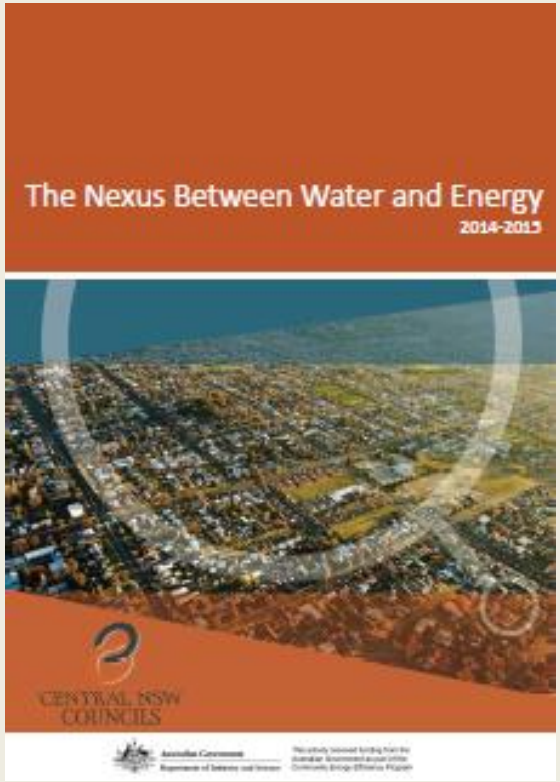
# Grant Funding




- increase energy efficiency of Council water and sewer assets
- install energy efficiency products demonstrating effectiveness of technologies
- build regional capacity and be implementation ready for further programming
- promote energy efficiency to Councils and communities

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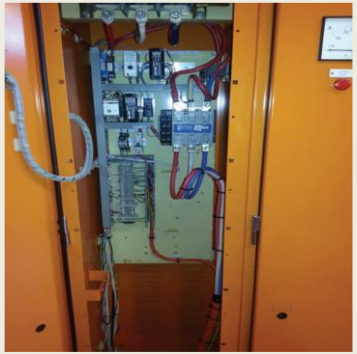
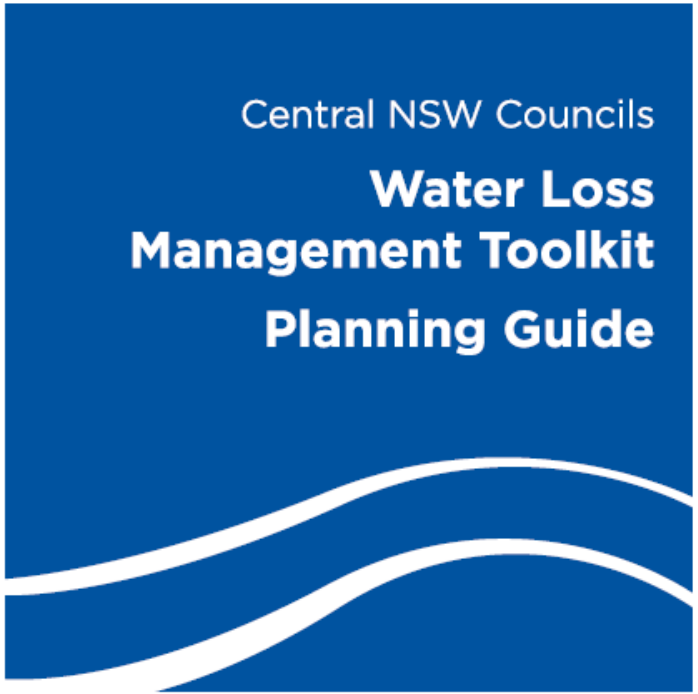
# Nexus between Water & Energy

- Sewer pipe relining at 11LGAs
- Manhole repairs (Forbes)
- VSD installation at WTP (Orange)
- Audit of water treatment plant (Boorowa)

- Monitoring, location & repair of leakage & water losses (Parkes & Lithgow)




## Water Loss Management Toolkit:

Explains the basic concepts involved with managing water losses from water supply networks.

- Identifies how water loss management saves water and energy
- Captures lessons learned from existing projects
- Builds capability
- Partnered with NSW Water Directorate to provide Toolkits to Councils across NSW.

***A Water Loss Management Plan is the primary tool for diligent water resource management.***

## *Why?*

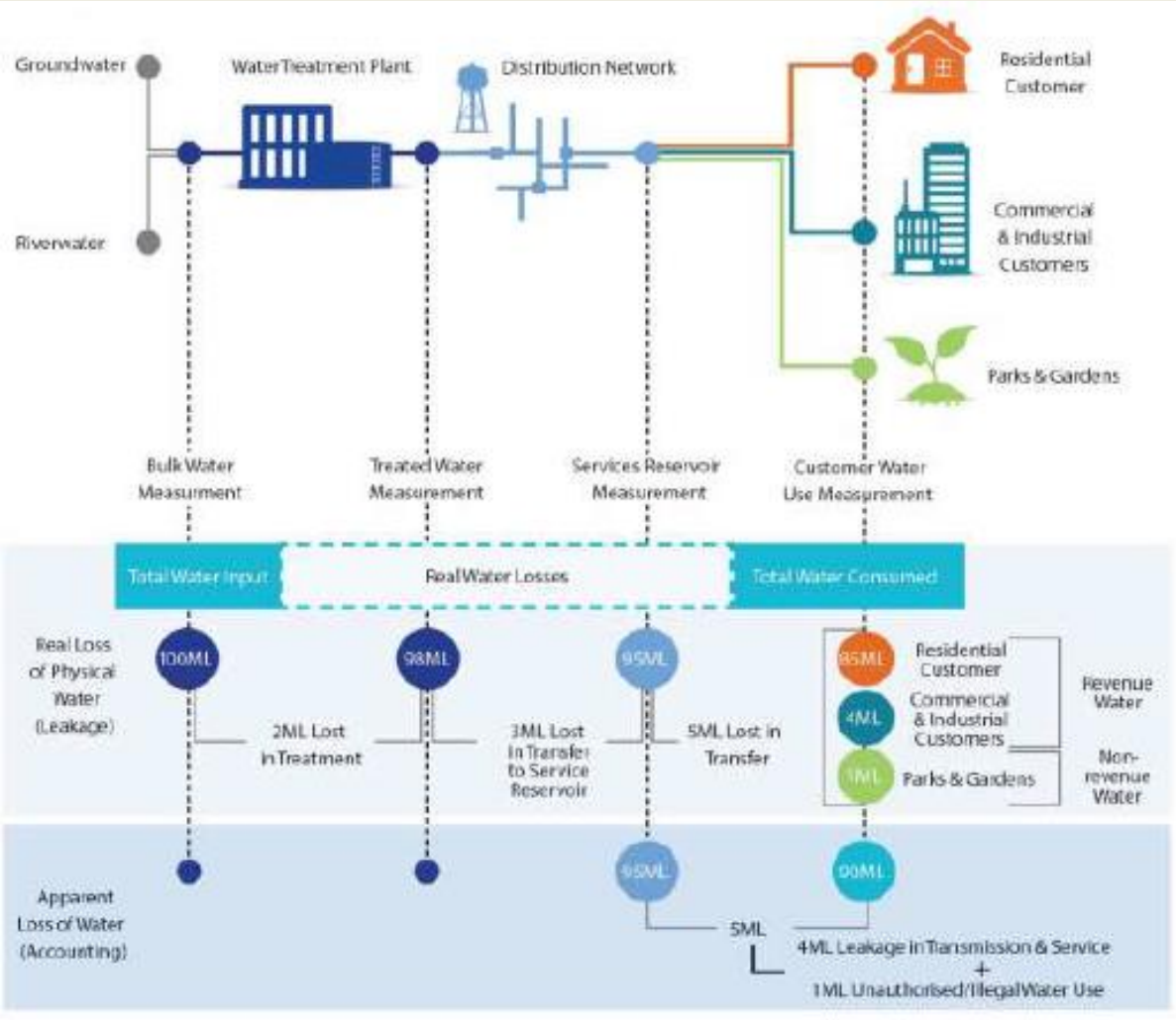
- Saves both energy & water
- Reduces costs
- Can be avoided
- Can sustain water supplies
- Protect the environment

<table>
<tr><td rowspan="8">Water produced</td><td rowspan="4">Water consumed</td><td rowspan="2">Billed consumption</td><td>Billed metered consumption (including water exported)</td><td rowspan="2">Revenue water</td></tr>
<tr><td>Billed unmetered consumption</td></tr>
<tr><td rowspan="2">Unbilled consumption</td><td>Unbilled metered consumption</td><td rowspan="6">Non-revenue water</td></tr>
<tr><td>Unbilled unmetered consumption</td></tr>
<tr><td rowspan="4">Water losses</td><td rowspan="3">Apparent losses</td><td>Unauthorised consumption</td></tr>
<tr><td>Customer meter inaccuracies</td></tr>
<tr><td>Data inaccuracies</td></tr>
<tr><td rowspan="3">Real losses (or leakage)</td><td>Leakage on transmission and distribution mains</td></tr>
<tr><td>Leakage and overflows at storage reservoirs</td></tr>
<tr><td>Leakage on service connections up to the point of customer metering</td></tr>
</table>

**Figure 1: Components of the water supply**
(Adapted from IWA)

# What is water loss management?

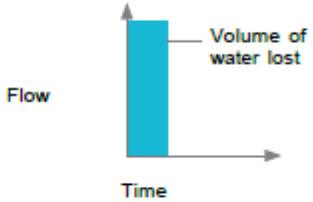
Managing water supply networks to reduce water losses between supply and delivery to the customer.




# What causes water loss?

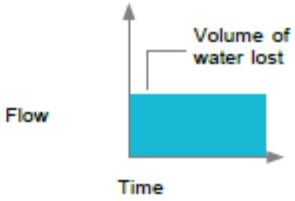
# Leak size and water lost

Large breaks:



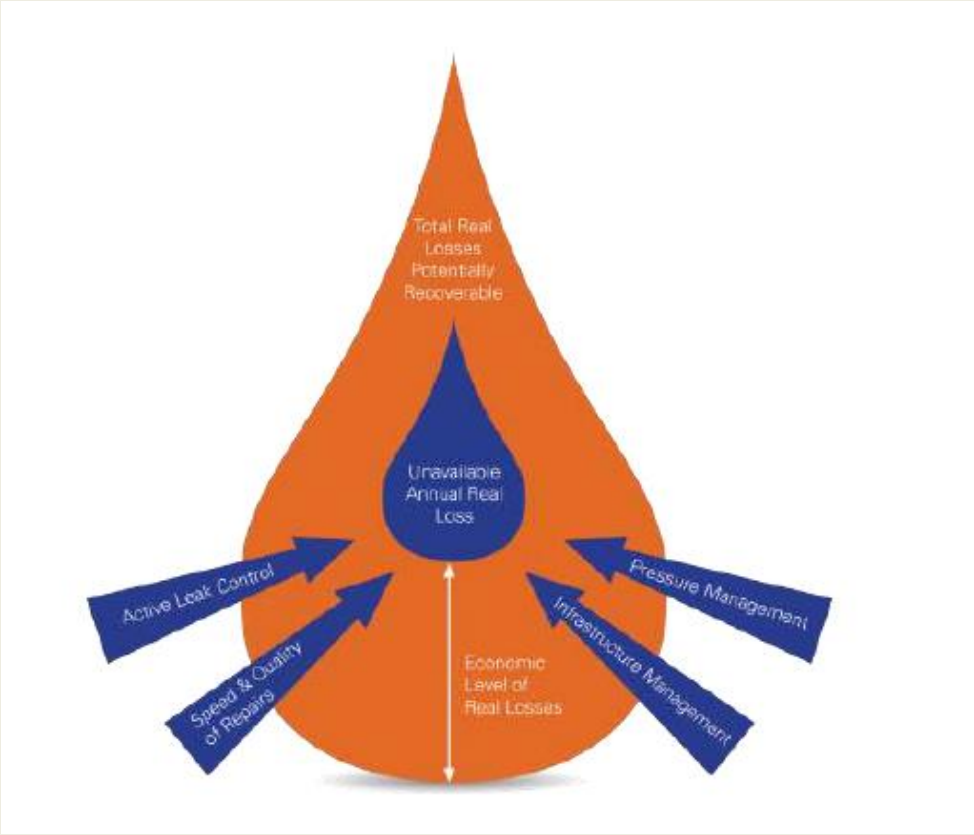

- Highly visible
- Quickly fixed

Small leaks:




- Invisible
- Longer time to repair

# Four Basic methods for managing water loss




- Active leak control
- Pressure management
- Infrastructure management
- Speed and quality of repairs

# Water loss management planning: 5 elements

1. Determine your network's water loss performance
   - Gather information
   - Conduct top down water balance to determine losses
   - Assess significance of losses
   - Communicate with decision–makers and customers

2. Setting up your planning tools – best practice
   - Design and review district metered areas
   - Advanced planning tools
     - network hydraulic models
     - dashboard solutions

## 3. Developing and implementing your water loss management plan

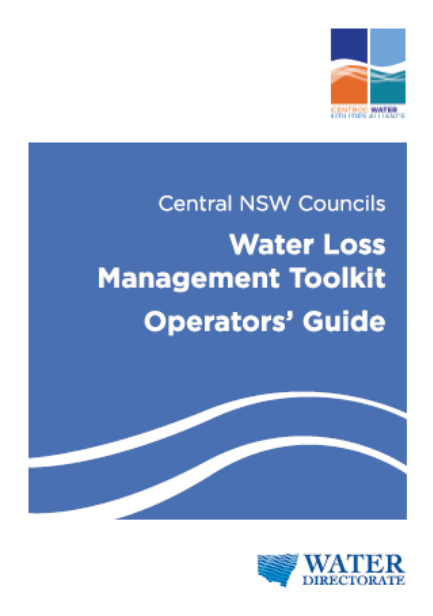
- Verify water losses
- Set objectives and targets
- Identify and measure leakage
- Perform cost-benefit analysis
- Define the investment plan
- Incorporate into strategic business plan

## 4. Actions to support your plan

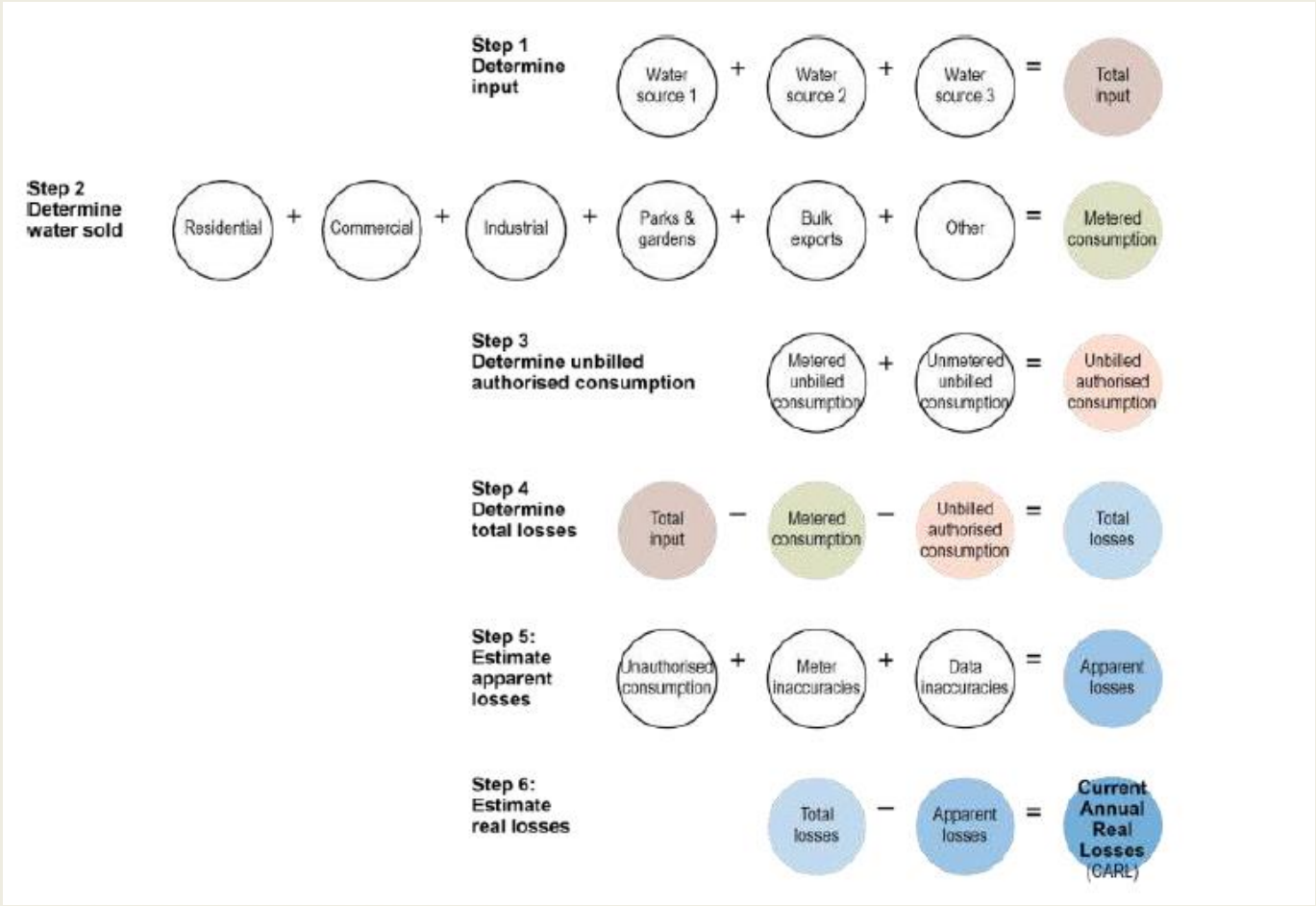
- Identify key stakeholders and their roles
- Audit data sources and business processes
- Develop a communications plan
- Review forward  budgets for water loss management

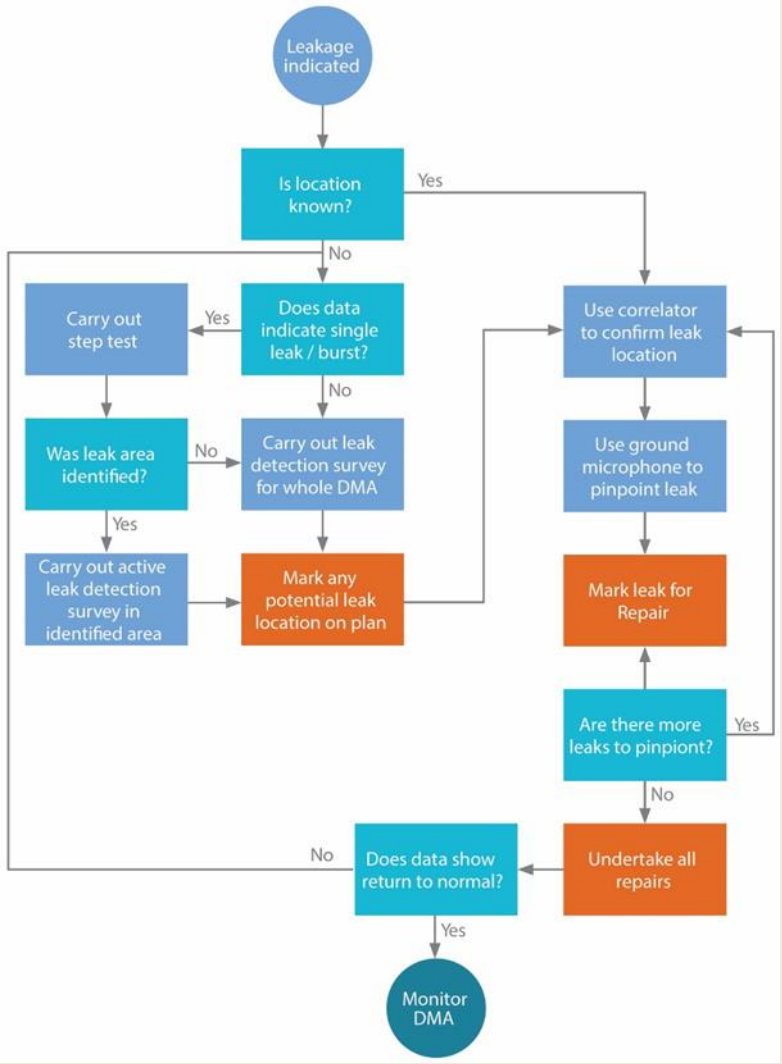
# 5. Monitoring, reviewing and improving your plan

- Develop a monitoring strategy
- Determine a review cycle, including triggers for revising

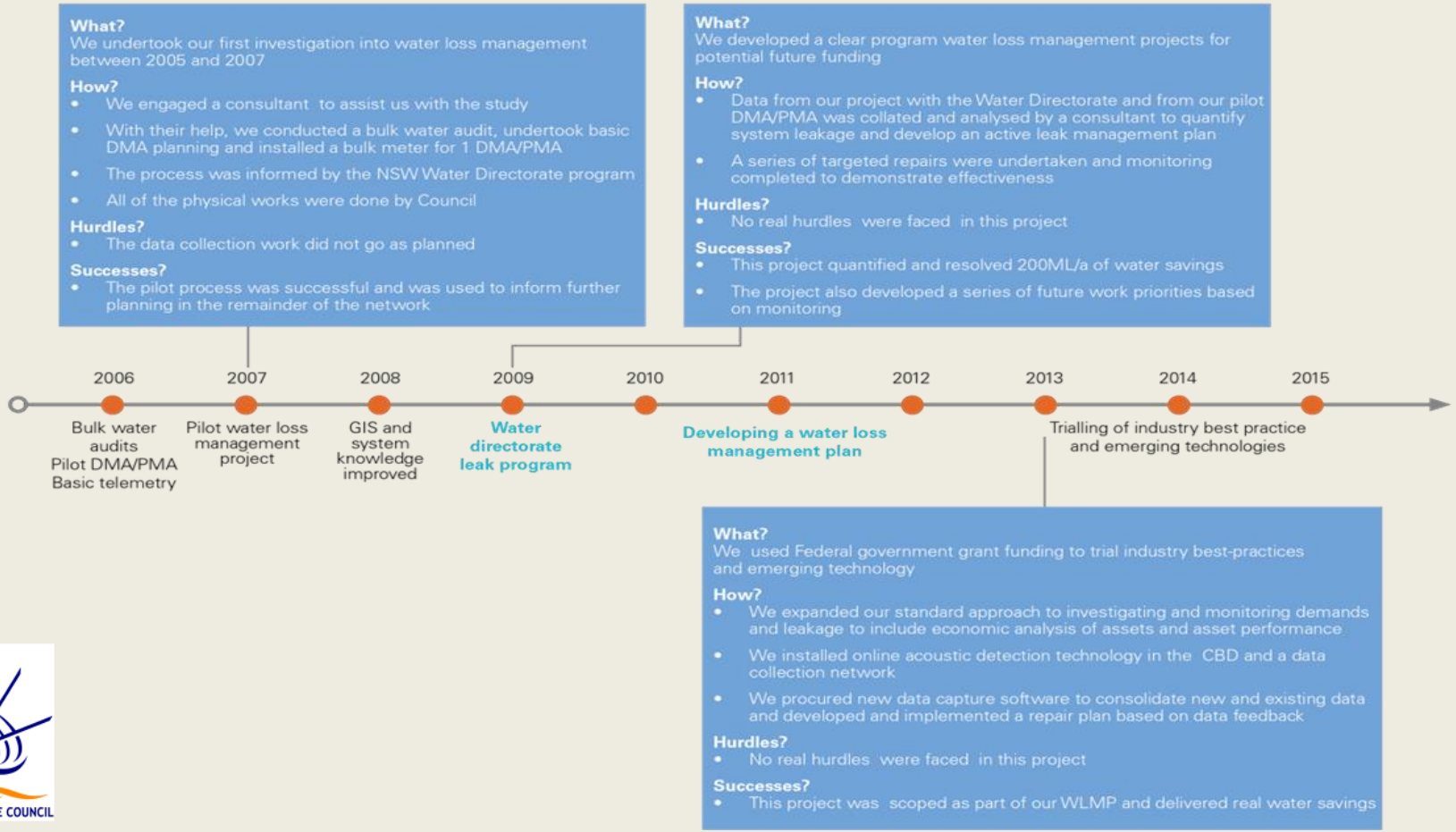
# Steps for conducting a top down water balance






# Locating and pinpointing leaks

# Parkes Shire Council's Water Loss Management Journey

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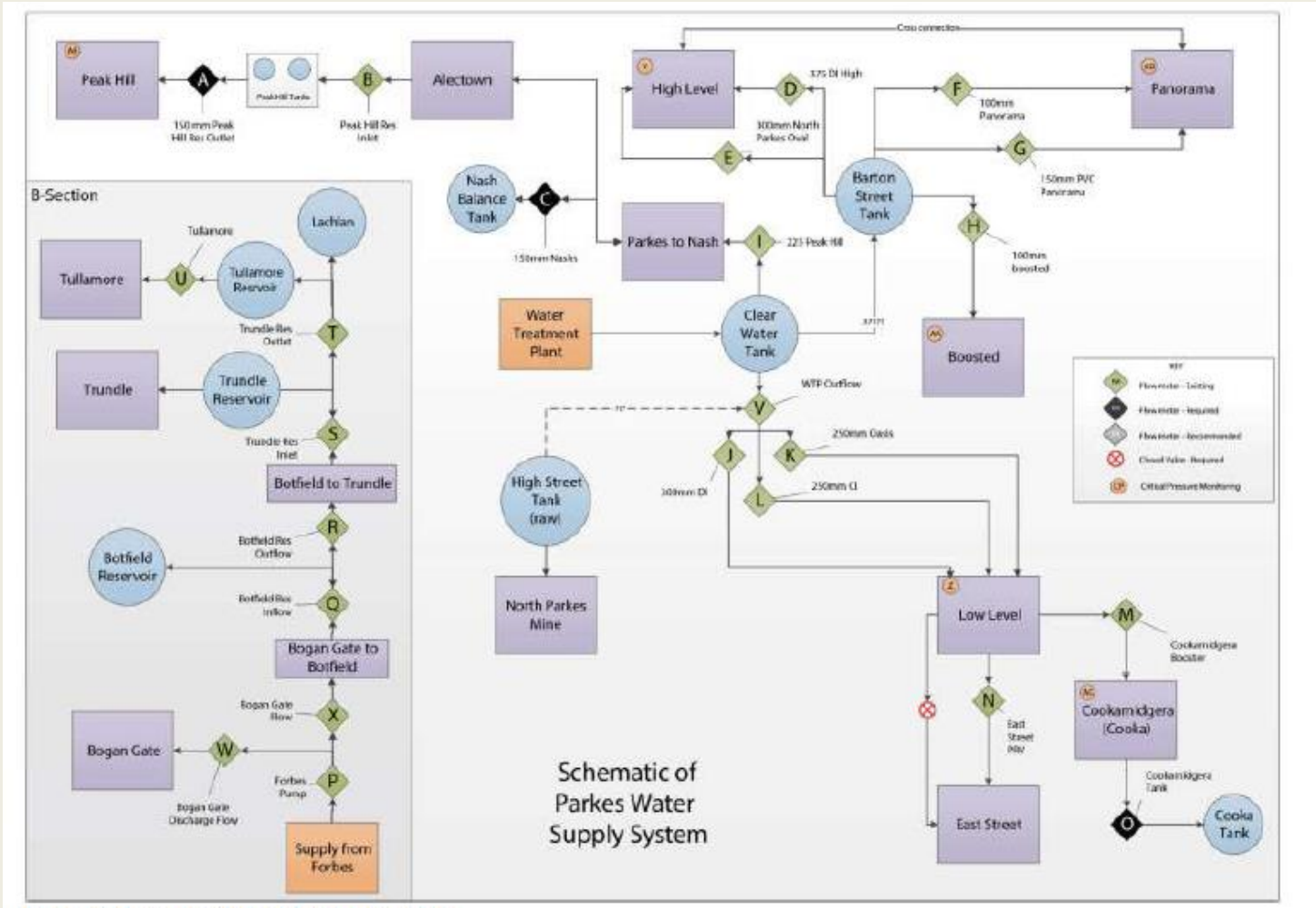


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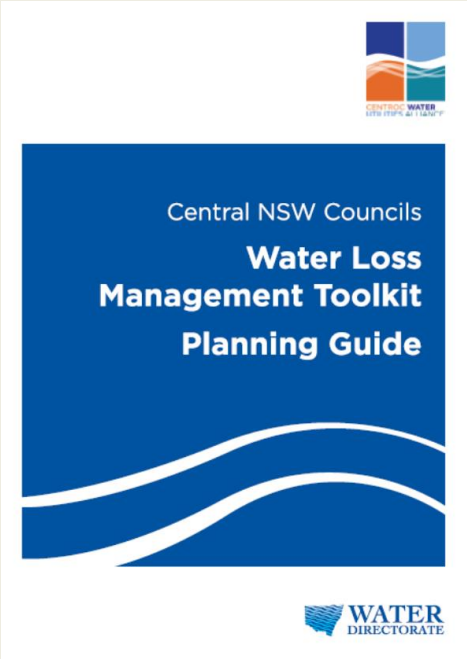
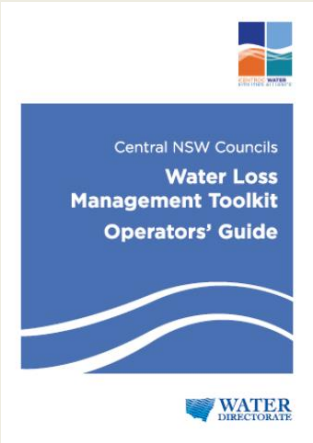
# Questions the toolkit will help answer




- ✓ What is water loss & why does it matter?
- ✓ What are the causes & how to quantify?
- ✓ What triggers management of the loss?
- ✓ What activities to undertake?
- ✓ How water loss relates to energy savings?
- ✓ How to sustain savings made from investments in water loss management?

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# Thank you