



Government of **Western Australia**  
Department of **Health**

# **Local and innovative partnering in addressing large scale, chronic community water usage issues**

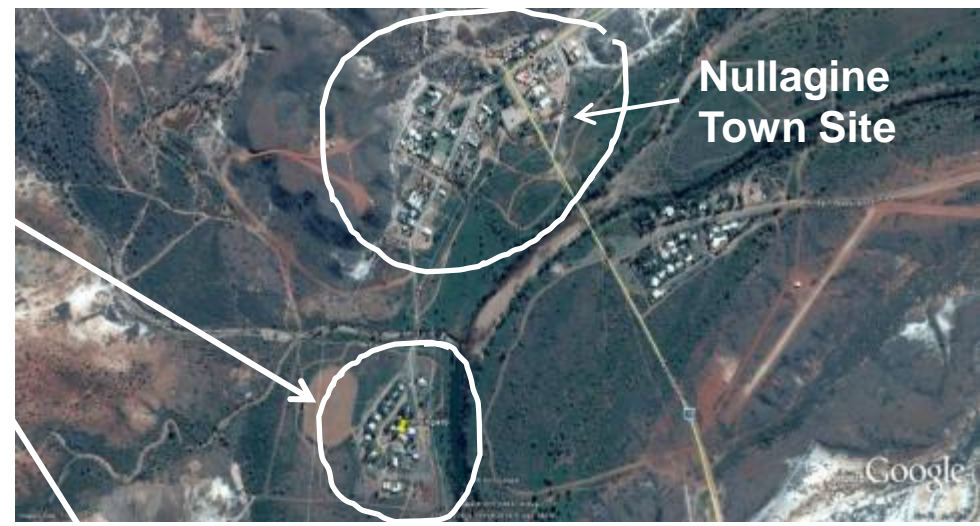
better health • better care • better value

# ***The Story...***

**The Situation?**

**The Players?**

**What Happened?**



## WHERE?

Irrungadji – a small remote community in WA's Pilbara region

# The situation & the players...

- 17 Houses + 2 other substantial community buildings
- Town-based water supply (Water Corp) – master meter in place
- Historical high water consumption. However...
- 15/16 water consumption almost doubled & 70% higher than nearby town of Nullagine
- 2015 Water data loggers installed to establish a '*water use profile*'
- April'16 - EH RTO engaged by CDP Agency for Cert II course with endorsement of community members
- Significant outstanding & rising debt to Water Corporation (>\$100K)
- Plumbing Regulations – Dept of Commerce & PLB
- Partnerships established between multiple persons & organisations (at least 7 key people/organisations)

- Empower Education (Greg McConkey)
  - Cert II course delivered over 10 consecutive weeks
  - Delivered in community; inclusive of plumbing units including theory & practical
  - State of community plumbing assessed as needing 'serious' work!
  - Water Corporation and Plumber contacted for 'help' & 'guidance'
  - Department of Health's Environmental Health Directorate recognised the need & saw an opportunity to help improve the situation

# Water consumption at Irrungadji

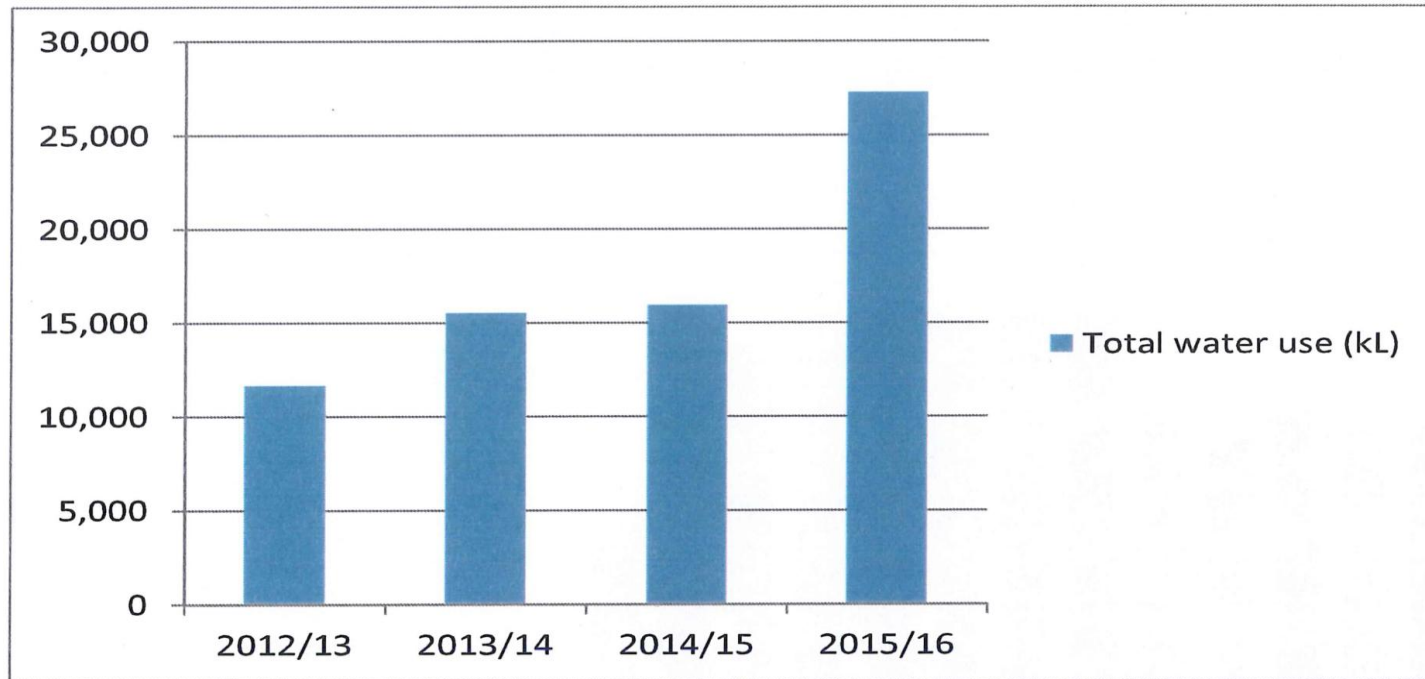


Figure 1: Historical water consumption at Irrungadji

- **Data loggers confirm multiple major leaks some >20 litres/minute. Average community consumption was 87,312 litres/day.**
- **Escalating unsustainable levels of debt for water consumption (>\$100K)**

# Samples of plumbing issues at Irrungadji required plumber intervention



# Plumbing Opportunities for AEHW Intervention





# In Class - Tap basics





**This goes with that...**



**Reseating a bathroom tap**



# Plumbing Opportunities for AEHW Intervention: After (sample)



**House 16 - leaking washing machine taps replaced**



**House 16 - leaking laundry taps reseated and spindles replaced**

# AEHW Plumbing Intervention: After (sample) cont...



House 16 - shower tap spindle replaced ( previously no handle)



Washer on right from bath at house 16 - serious leak for considerable time- reseated and replaced by AEHW trainee



**Tap washer  
distorted  
and  
damaged  
from over  
tightening  
to stop  
leak**

***New  
washer  
~\$0.85***



- **Before (Blocked DT)**
- **During**
- **After (Unblocked)**



**Greg  
(“Conks”)**

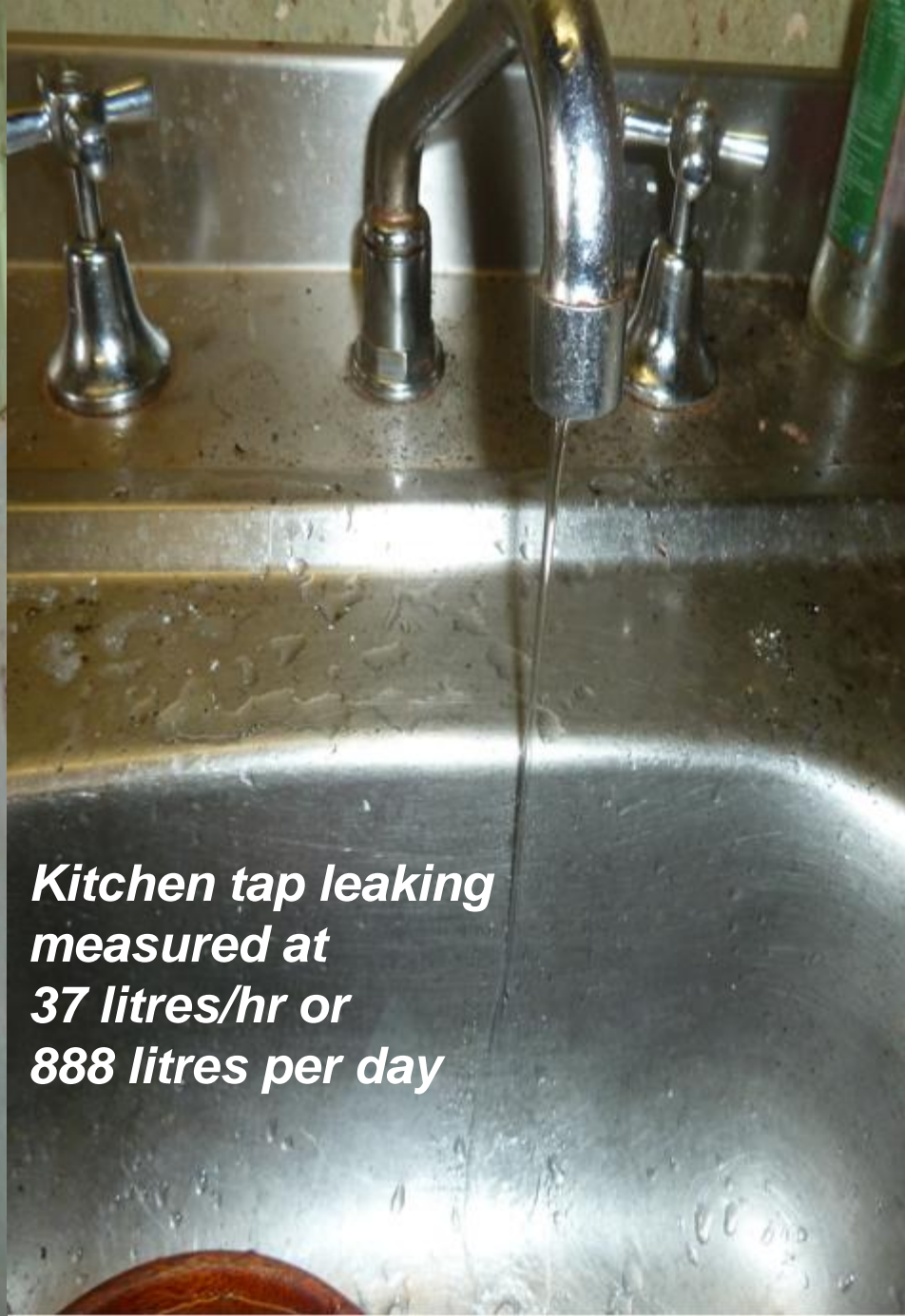
**Trainee**











***Kitchen tap leaking  
measured at  
37 litres/hr or  
888 litres per day***



# Example: daily water consumption figures (bars) for house 6 (21 day period)

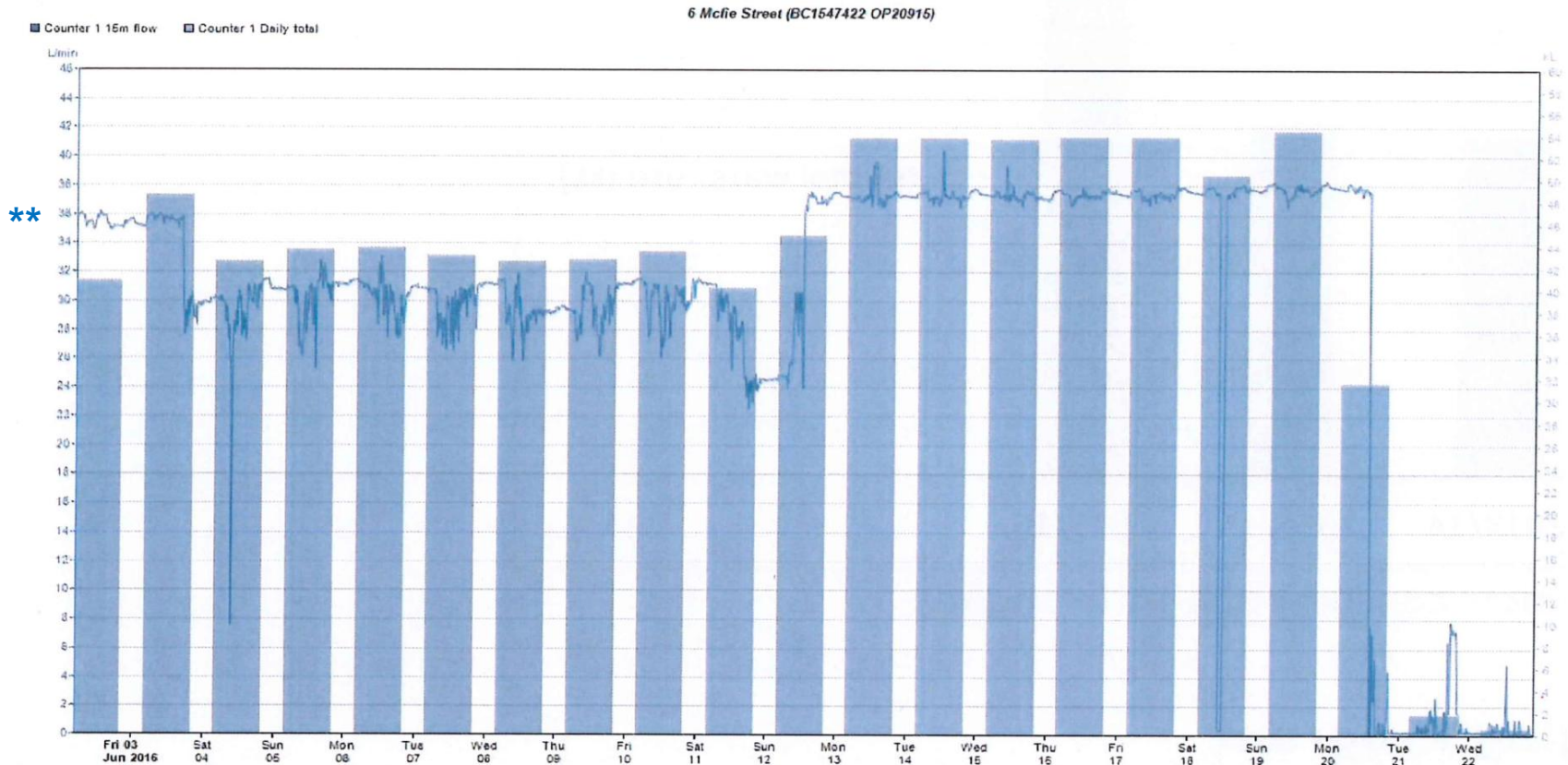


Figure 2: Data logger installed on House number 6 at Irrungadji Community.

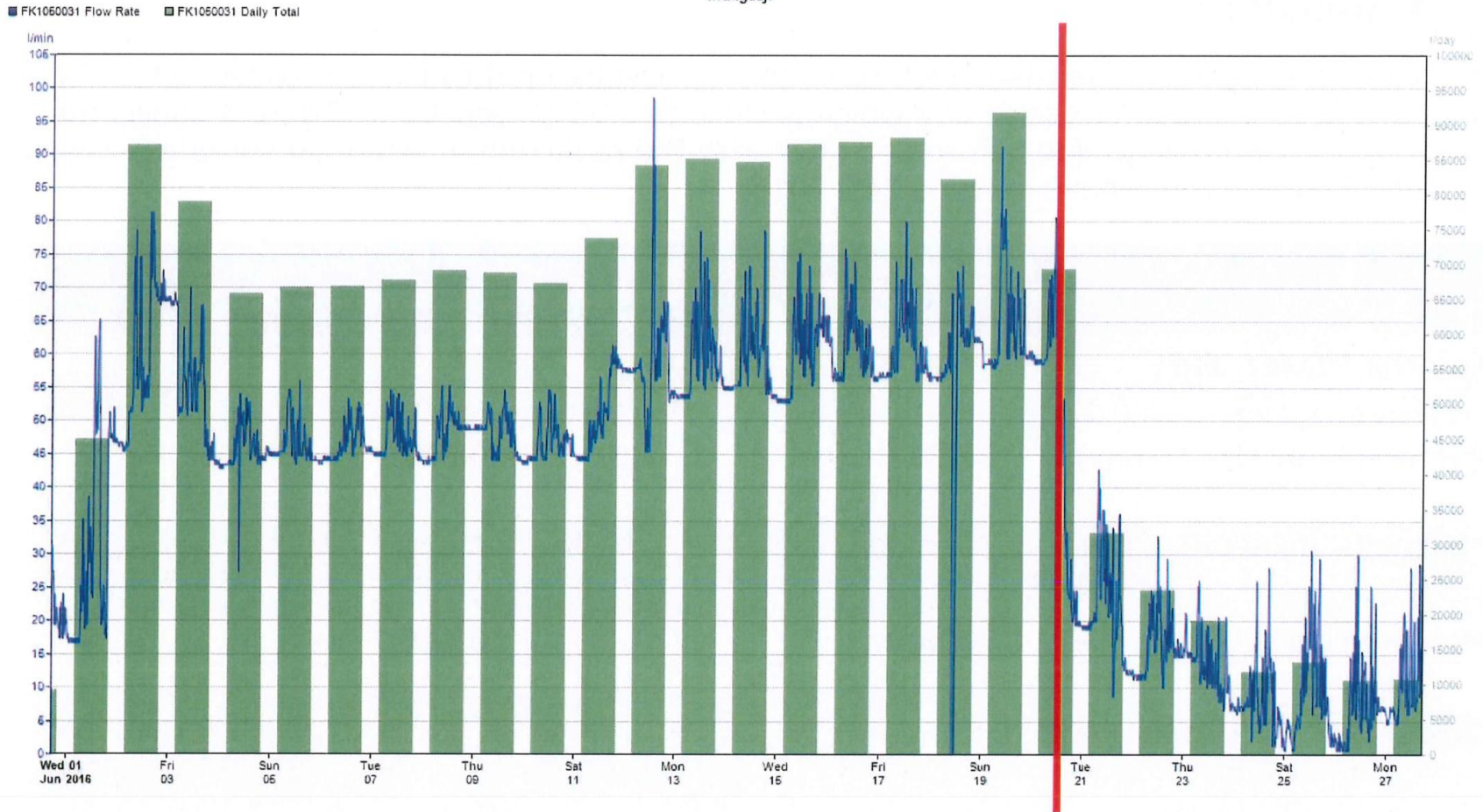
*\*\* Blue line shows flow rate during the 24 hour period of each day*

# Water use before & after plumbing repairs

	Before	After
<b>Overall Water Use</b>		
Average Daily Use (L/day)	87,312	10,672
Maximum Daily Use (L/day)	160,000	16,000
Minimum Daily Use (L/day)	30,000	10,000
<b>Sites with leak identified</b>		
Number of Sites with major leaks (>3L/minute)	5	0
Average Leak (L/minute)	20L/minute	0

Table 2: Water use before and after plumbing repairs

***76,000 litres/day reduction ~ 90% reduction***



**Daily water use and flow rate before & after plumbing repairs (indicated by red line)**



# Water use charges at time of repairs

Usage per year	Class 1	Class 2	Class 3	Class 4	Class 5
First 350kL	\$0.606	\$0.793	\$0.793	\$0.793	\$0.793
Next 150kL	\$0.806	\$1.057	\$1.057	\$1.057	\$1.057
Next 100kL	\$7.706	\$2.346	\$3.126	\$3.675	\$4.324
Over 750kL	\$1.991	\$2.993	\$3.985	\$5.512	\$7.434

Reduction of 76,640 litres equals saving of :

- ✓ \$540 per day; or
- ✓ \$3,780 per week; or
- ✓ \$16,200 per month (30 days)

**Dept of Health  
Investment: \$12,000  
✓ Recouped in  
savings <23 days**

# Before / Cause / During / After



**“Optimisium”** *a new element in the Periodic Table of Elements?*

No...

*Just something with a half-life of “20 years”  
decaying to **“Pessimisium”***



**Thank  
You**