

SAAMA2018

Smarter approaches in asset management

4-6 JUNE | NH The Lord Charles Somerset West



Dropula Smart Water Meters help schools save water

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Points of Discussion

- What is the Dropula Smart Water Meter?
- How has the smart meter been used at schools?
- Examples of scenarios
- What can be achieved?
- Summary



What is the Dropula Smart Water Meter?



- Dropula™ takes water consumption online.
- Compatible with a variety meters.
- 10-minute resolution provides detailed insight.
- Real-time data enables timely alerts.
- Data presentation and reporting.
- Wealth of data stored online enables many possibilities.



How has the smart meter been used at schools?



- Technology being implemented at over 350 schools in WC.
- Significant amount of leaks and wastage discovered.
- #SmartWaterMeterChallenge includes maintenance.
- First, maintenance is addressed.
- Second, alerts given.
- Third, behavioural change due to insight.

THE SMART WATER METER CHALLENGE



Minimum night flow: indicator of infrastructure state

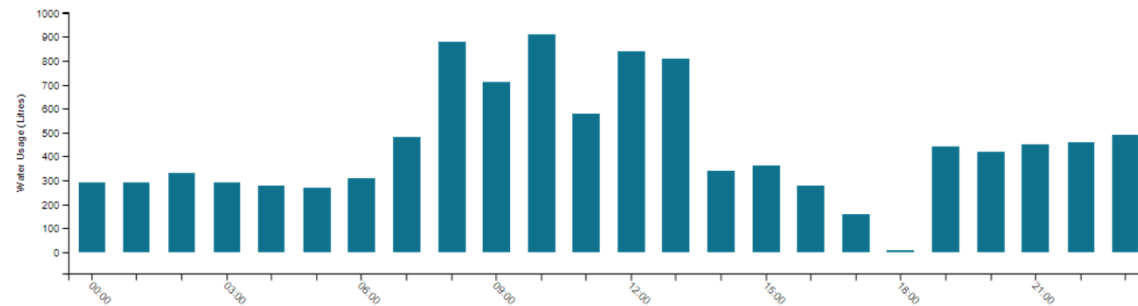
School A:

R4700 maintenance

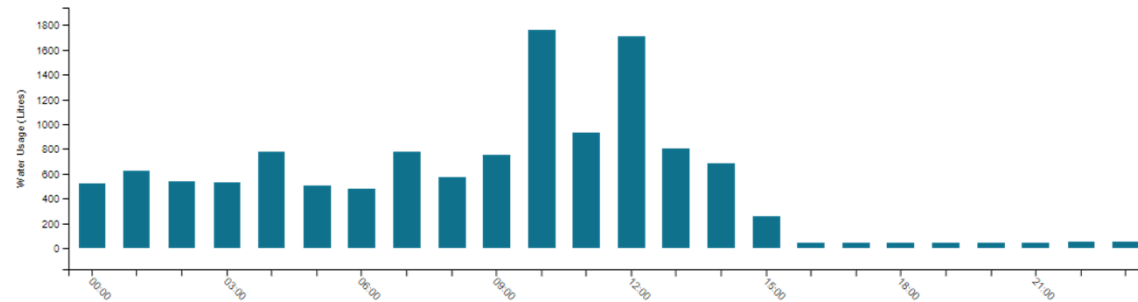
Leak reduced from
250l/h to 40l/h

ROI in 10 days

28 Feb



1 Mar



Minimum night flow: indicator of infrastructure state

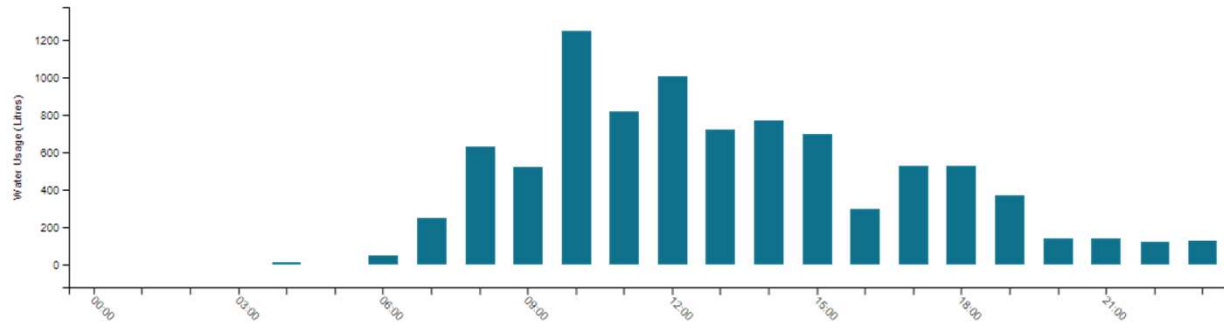
School B:

Start of leak at 120l/h,
increases to 200l/h.

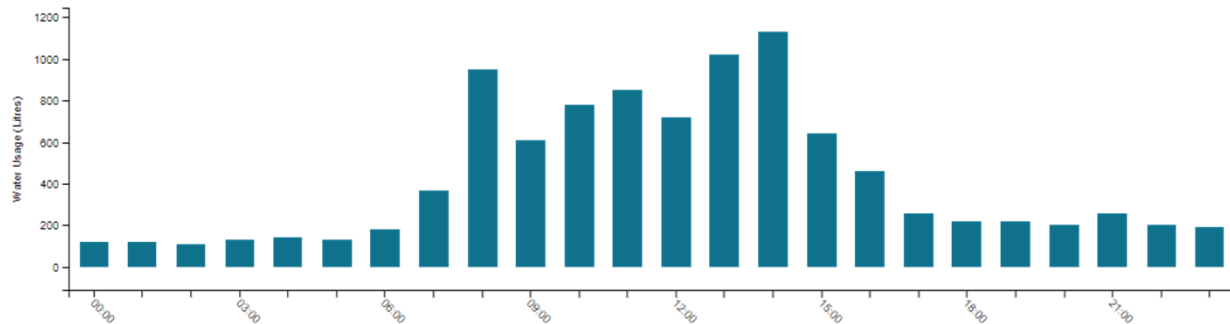
Wastes 283kL and
R12700

Leak finally fixed on 5
May.

6 Mar



7 Mar



Minimum night flow: indicator of infrastructure state

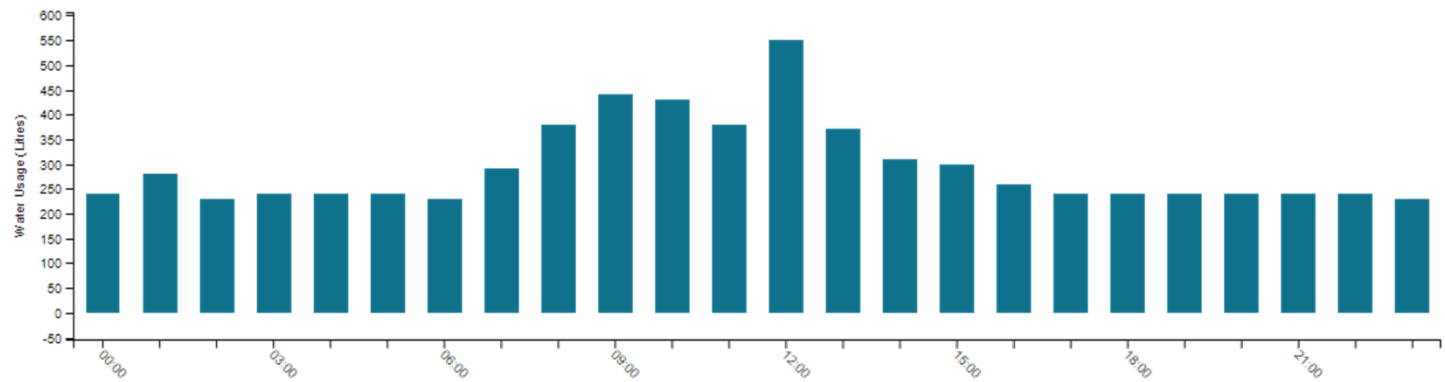
School C:

Underlying leaks
overshadow any effort
to save water.

Day's volume: 7kL

Legitimate: 1,3kL

Wastage: 81,4%



Minimum night flow: indicator of infrastructure state

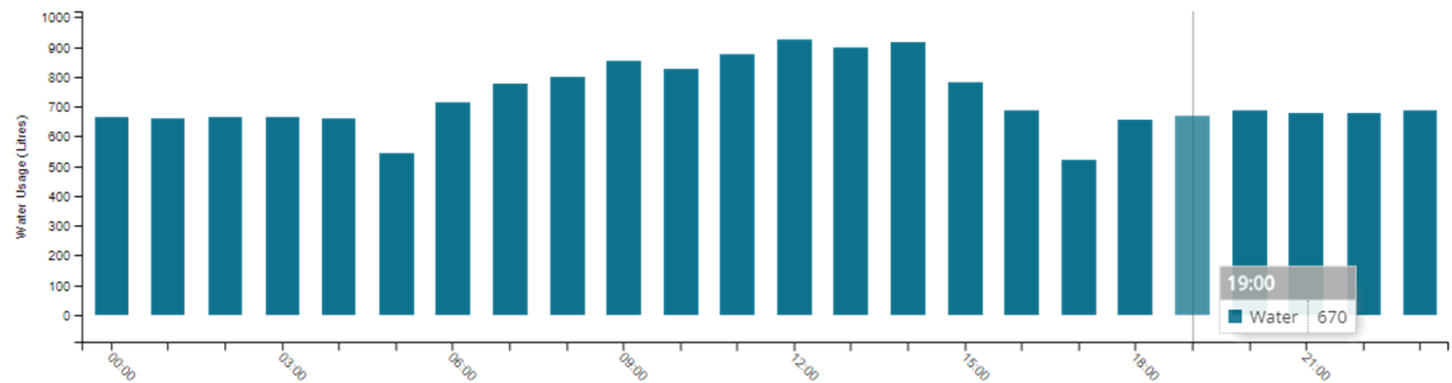
School D:

Underlying leaks
overshadow any effort
to save water.

Day's volume: 17,3kL

Legitimate: 2,8kL

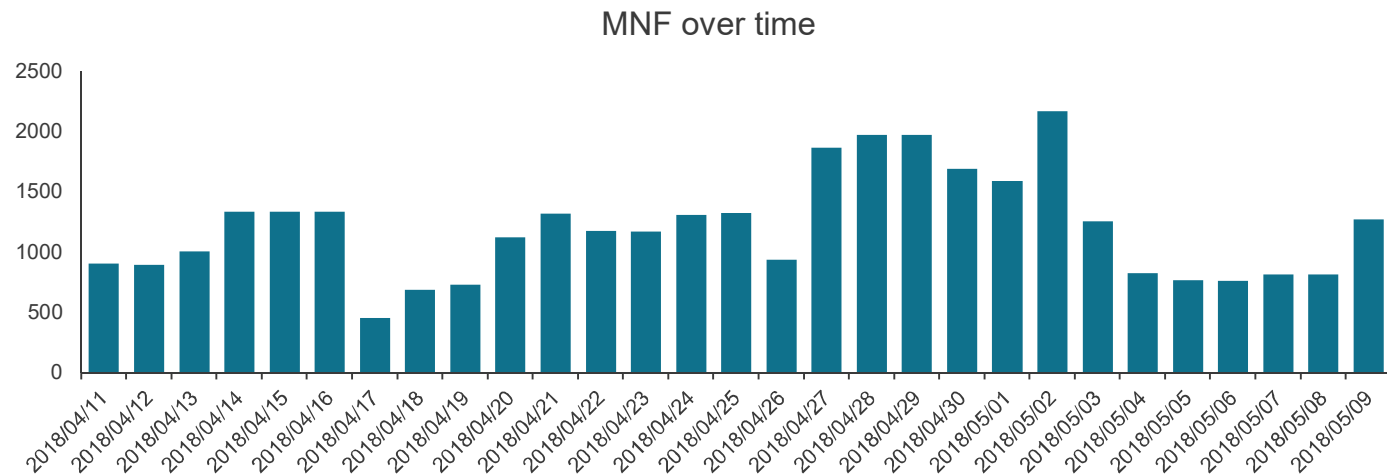
Wastage: 83,4%



Minimum night flow: indicator of infrastructure state

School E:

Fluctuating MNF over time indicates leaking taps and toilets, rather than permanent leak.



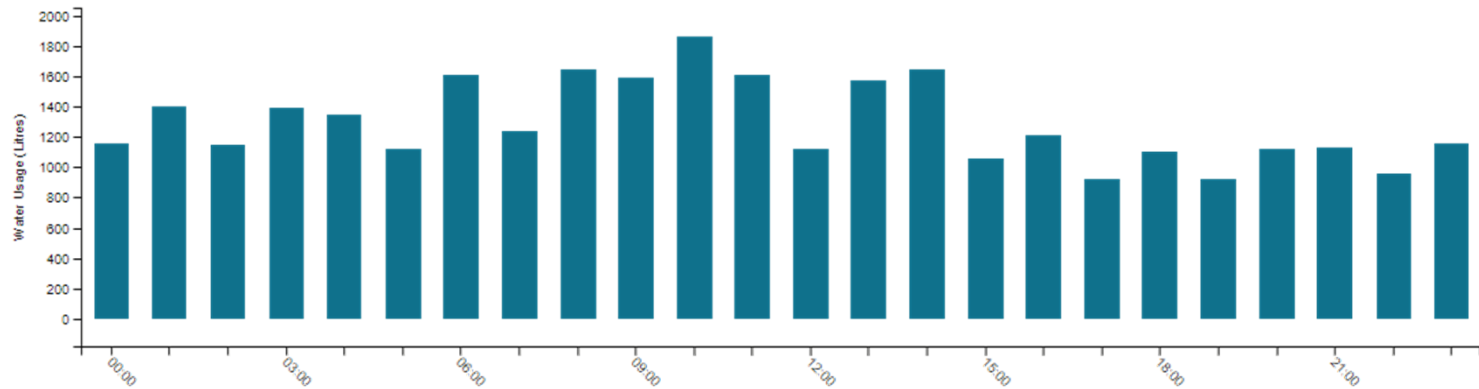
What happens when toilets are left running?



School F:

Toilets running constantly.

The day's use does not stand out above the wastage.



Burst Notification

School G:

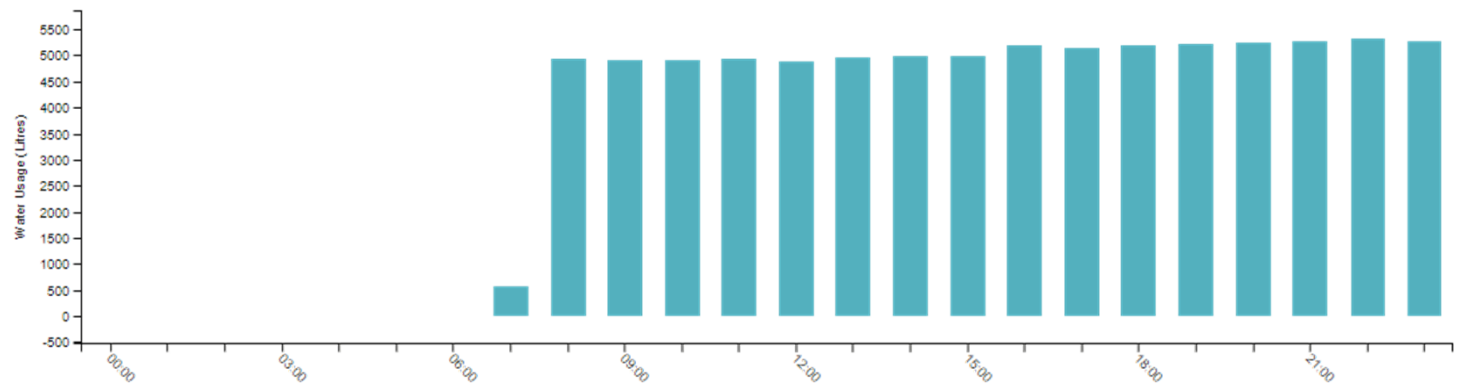
5kL/h leak started on long weekend.

Notification sent at 8am.

School responded 9am, 30 April, two days earlier than otherwise.

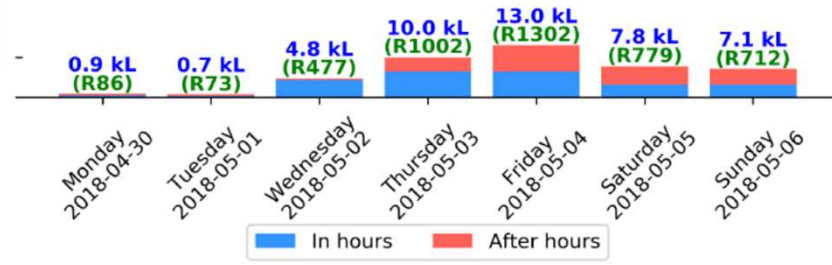
Total loss limited to 245kL and R12000.

28 April (Long weekend)

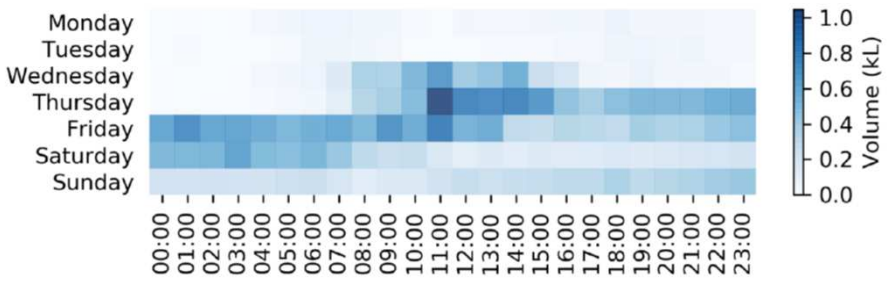


Reports

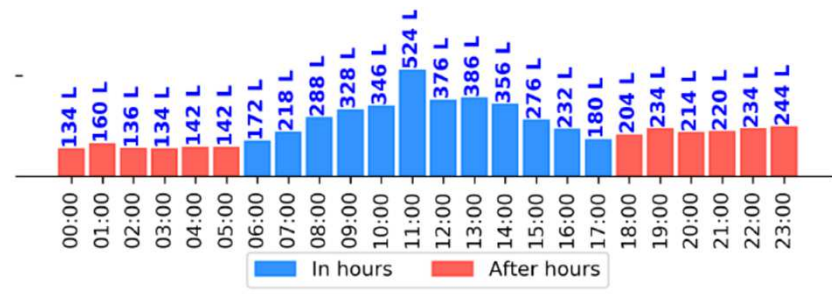
Weekly Usage Volume and Cost for the Week



Volume Total: 44.31 kL
Cost Total: R 4431.00
Highest Usage Days: Friday
 Thursday



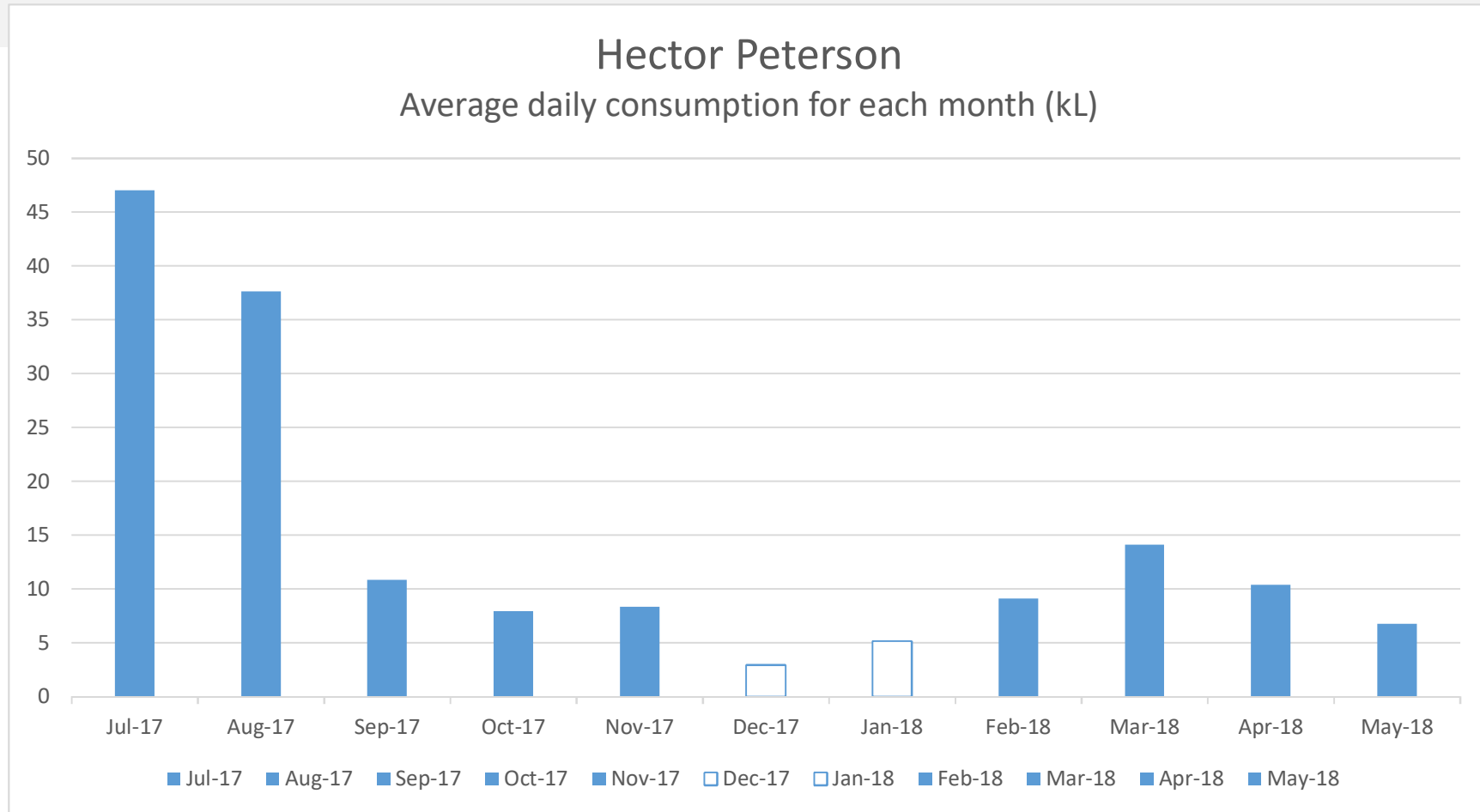
Average Hourly Weekday Usage Volume



Average Daily Volume: 5880 L
Average Daily Cost: R 588.00
Highest Usage Hours: 11:00
 13:00
 12:00



What can be achieved?



What can be achieved? - Behavioural Impact

- Behavioural impact can be significant.
- Hector Peterson reduced consumption from 12kL a day to 5kL.
- Difficult to ensure; individuals and institutions differ.
- Challenging to maintain; requires constant awareness.



Total impact #SmartWaterMeterChallenge

- Maximum saving in a day achieved: 1 million litres.
- Total saved: 66,5 million litres.
- Schools online: 250+
- Maintenance completed: 120



Summary

- Ignorance of wastage and impact of bad maintenance.
- Underlying leaks overshadow water-saving attempts.
- Non-resetting toilets and open taps a significant concern.
- Minimum night flow is a key indicator of infrastructure state.
- Immediate notifications on burst can radically reduce response time.
- Reduction due to increased awareness can be substantial.

