

# Rainfall Dependent Infiltration and Inflow (RDII)

## Analysing the impact of RDII on water treatment costs across multiple catchments

### The Problem

An interesting challenge facing many water corporations is the infiltration of storm water into the sewer system substantially increasing treatment costs (energy and chemical) and increasing risk of spills.

There are standard formulas for analysing RDII that can both measure the impact and evaluate effectiveness of remedial activity; but these are complex and time consuming to do manually.

Our challenge was to implement an effective RDII solution to make this data available to analysts in real time.

### The GTS Application

Capturing data and implementing user-configurable analyses in the PI System is a straightforward task. In this case the fairly static catchment area data was integrated together with rainfall and treatment plant data. Working with analysts at Gippsland Water, an algorithm for calculating RDII was implemented using the PI System Analyses tools.

In very simple terms the 'normal' treatment plant flow was compared with the flow following rainfall events to measure the volume of stormwater infiltrating each system.

Results were displayed in real time using dashboards allowing analysts to easily compare different catchments right now as well as examining historical records for changes over time.



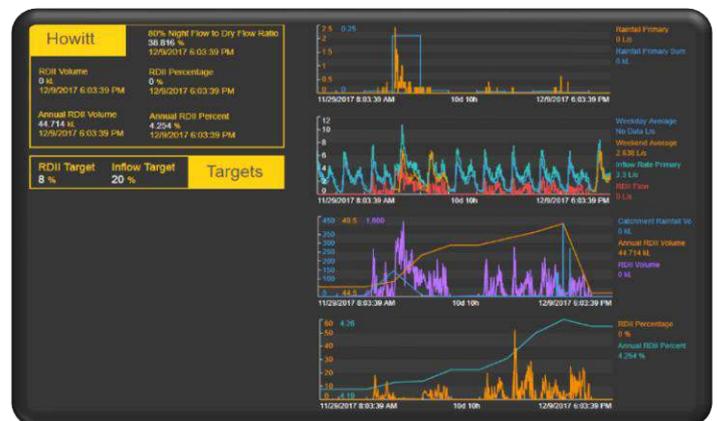
### The Benefits

The obvious benefits are the substantial time saving when generating the data. Additionally having access to real time, and historical RDII data allows comparisons to be made both before and after remedial action.

This brings efficiency through automation of the process and assists with strategic decision making in terms of prioritizing remedial activity or changing the approach to remediation e.g. if evidence suggests limited benefit in current practices.

Having evidence of the actual costs of stormwater infiltration on water treatment, and the value of remediation, may influence budget decisions around funding remediation in worst affected areas.

Long term we would expect that remedial activity can be directed to the areas most affected ultimately reducing water treatment costs and lowering risk of a spill.



*The solution originally developed for the IWN Trial showed that complex time-consuming analyses done in spread sheets can be automated to support tactical and strategic decision making at substantially reduced effort.*

