Old School Asset Condition Assessment

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Burdekin Shire Council
I’m not a troglodyte

• No argument that technology has, and continues to provide better and better tools for gathering information, interpreting it, and applying that knowledge to our systems.
• Fit for purpose methods and methodology- one size does not fit all.
• Nature of a small-medium regional WSP:
  – Often have poor stored data (GIS, assets, Plans and manuals)
  – Limited budgets and efficiencies of scale
  – Often suffer from isolation and lack of knowledge of what is out there or how to find out.
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  – Know our networks well (part of our human resources)
  – Often our staff have a good “feel” for how things work and are resourceful, if not always highly skilled
  – But still work in a framework generally developed with/for larger organisations

But that doesn’t mean we have to (or should) do things the same way they do.
Shiny Thing!

- At the same time there is no doubt in my mind we all suffer from “the latest shiny thing” syndrome.
- We are often an easy sell for salesmen of the latest tools, without necessarily doing our own research and, more importantly-analysis, of how well it suits our needs.
  - We are quick to follow other’s examples before we seen if they have gained true value from the expenditure of resources
  - We are quick to pull a solution off the shelf instead of finding the best solution to our need.
  - And we are sometimes (probably unknowingly) quick to judge those who make different decisions than we ourselves have in such matters.

That is why we can gain a great deal of value from opportunities like these talks to share knowledge and ideas.
Sewer Networks - Smoke Testing
Normal Asset Assessment Methods:

- CCTV: We have our own rod and robot cameras and carry out regular inspections of our networks on roughly a 5-year cycle
- Most of our network has been relined now

What have we learned?

- If you make more capacity on the gravity mains by reducing network infiltration, then you get more infiltration from the house drains (similar lengths and poorer condition than network) and inflow from illegal connections
- Some of the earliest relinings are already showing end-of life conditions and we are starting a second go-round, mainly to clean up the mess of snags they leave in the pipes when they fail.
- Even so.....SCADA shows clearly that illegal connections (inflow) is our biggest issue by far.
Smoke Testing

• Includes close examination of plumbing in properties as well as looking for smoke where it shouldn’t be.
• Identifies illegal and sub-standard connections and plumbing
• Doesn’t cost much more than the labour to carry out
• Requires some skill
• Considerable administrative overhead
• Requires:
  – Smoke machine
  – Camera
  – Crew of at least 3
  – Good documentation and training: (powers of entry, council resolution, letters)
Results?
Leak Detection
Burdekin Experience

- Average household usage is >750kL/year
- Water price: $0.26/kL (mostly pumping costs)
- Bores about 20 m deep
- VERY low chlorine residuals due to iron and manganese issues.
- >85% outside water usage
- >30% unaccounted water-mostly losses
- Sandy alluvial delta: water goes back down into shallow aquifers and shows no surface signs of leaks. Pipes often sit in groundwater anyway.
- Poor record keeping and 50 years of only reactive maintenance
- Extensive rural network as well
- Some AC pipelines beginning to fail (original pipe and laying quality issues)
My Gympie Experience

• >35% losses
• Found 2 large leaks and a few minor ones and losses dropped to <5%
• Gradually grew again over each following year

What did I learn:
• Only takes a couple of good leaks to generate very high losses
• You can find those leaks without a lot of dedicated resources
• You must keep doing the work to continue to reap the benefits.

So, of course we decided to do the same thing in Ayr (early days yet)
Results so far (5 days)

• 1 moderate leak
• 1 leaking service
• 1 service we didn’t know about
• 1 illegal connection

• Worthwhile continuing
Questions?