Best Practices For Enterprise Asset Management

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Goulburn-Murray Water
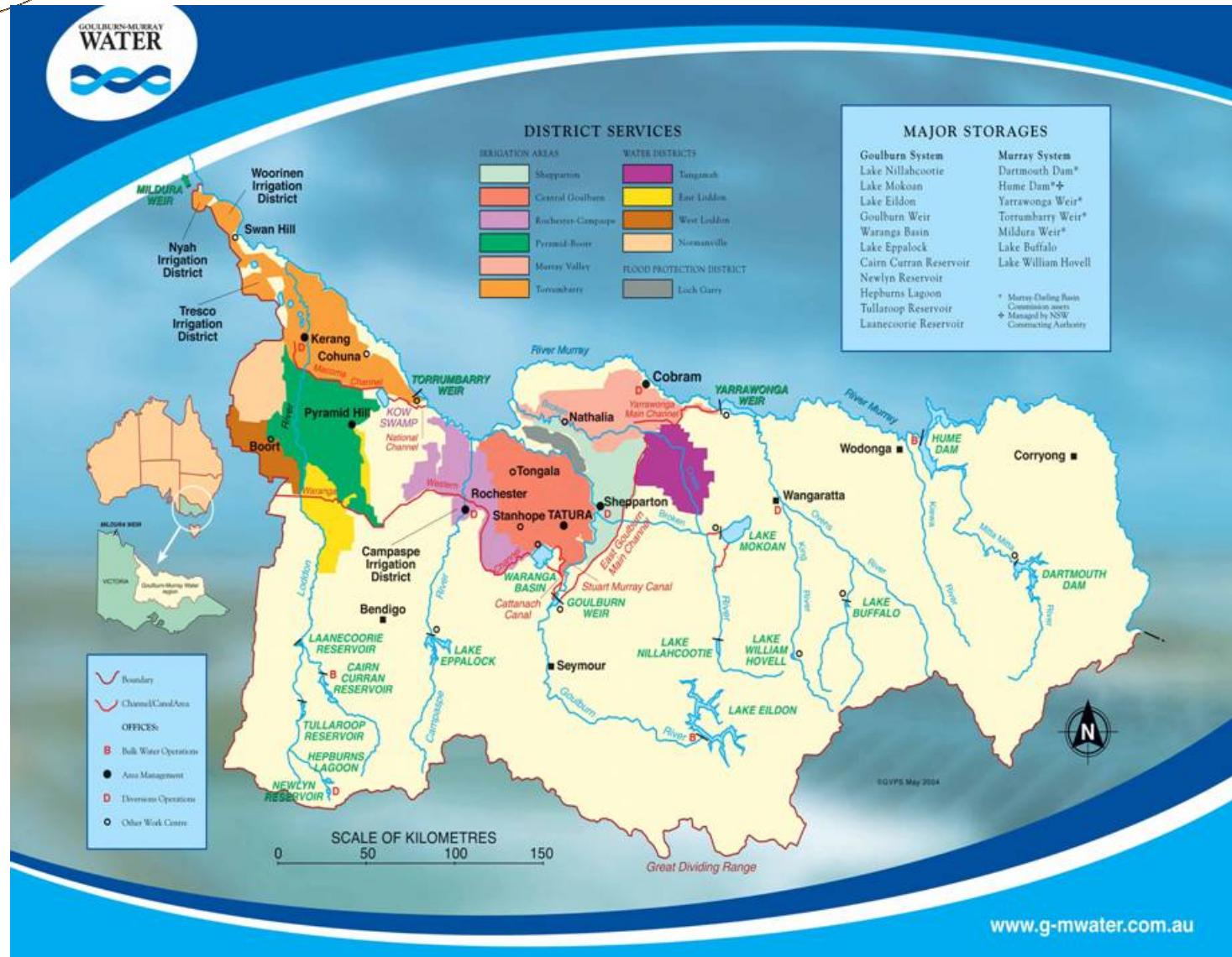
WHO ARE WE?

- Goulburn-Murray Water is a statutory Corporation constituted by Ministerial order under the provisions of the *Water Act 1989* (the Act). The Corporation is the Resource Manager for northern Victorian water systems.

- G-MW manages water-related services in a region of 68,000 square kilometres, bordered by the Great Dividing Range in the south and the River Murray in the north and stretching from Corryong in the east downriver to Nyah.

- G-MW also operates salinity mitigation works on the Murray downstream of Nyah, manages Mildura Weir, delivers bulk water to supply points outside its region and is the Victorian Constructing Authority for the Murray-Darling Basin Authority.
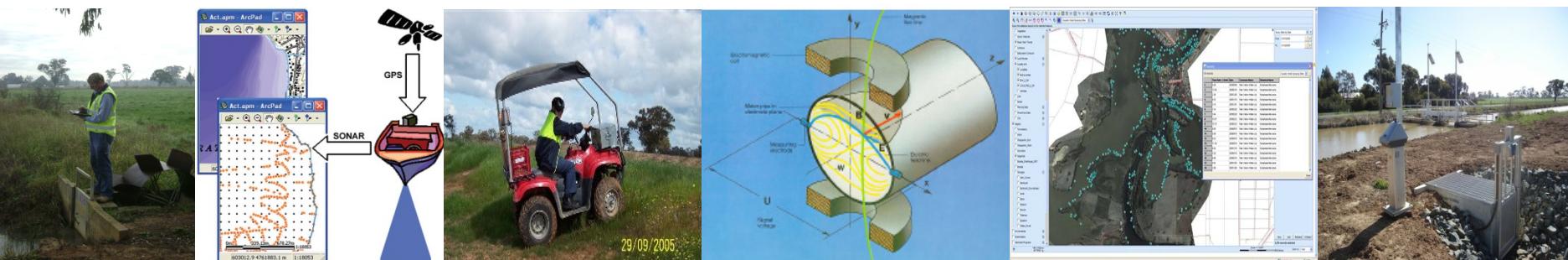
# OUR AREA
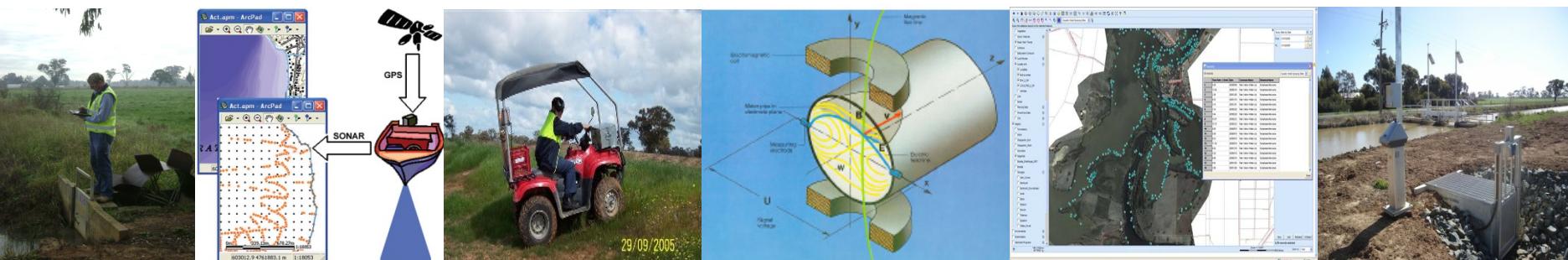
EAM Journey Begins

- G-MW commenced it's Initial Computer Aided Maintenance System Project in 1997 completed 1999
- It has been on a continuous journey since then
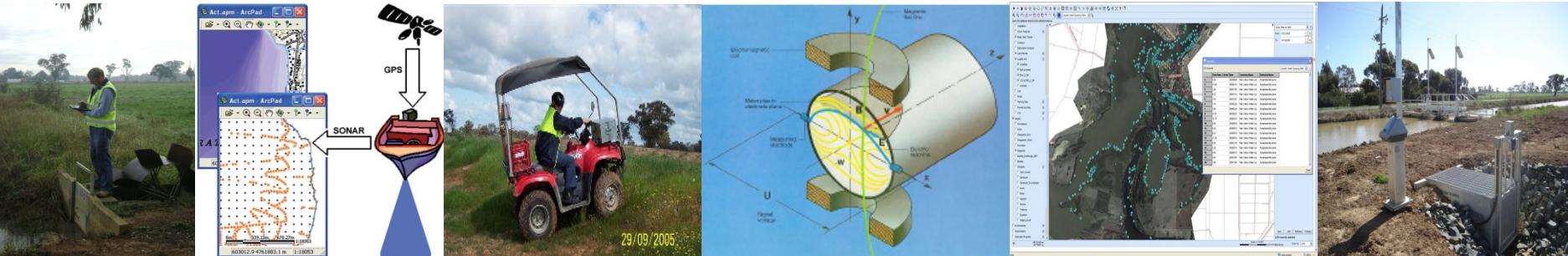
EAM Legacy

- Legacy System Hansen AssetLife
- G-MW has had a substantial change in asset base
- Issues with ability to plan and review preventative maintenance
- Issues with linking to other corporate systems
  - GIS (mapping)
  - Financial System
  - Customer and Billing system

Maximo Implementation

- G-MW went live with IBM Maximo in August 2010
- Implementation period was 9 months
- Initial Implementation by IBM
- Support and ongoing improvements Kalibrate

Maximo Footprint
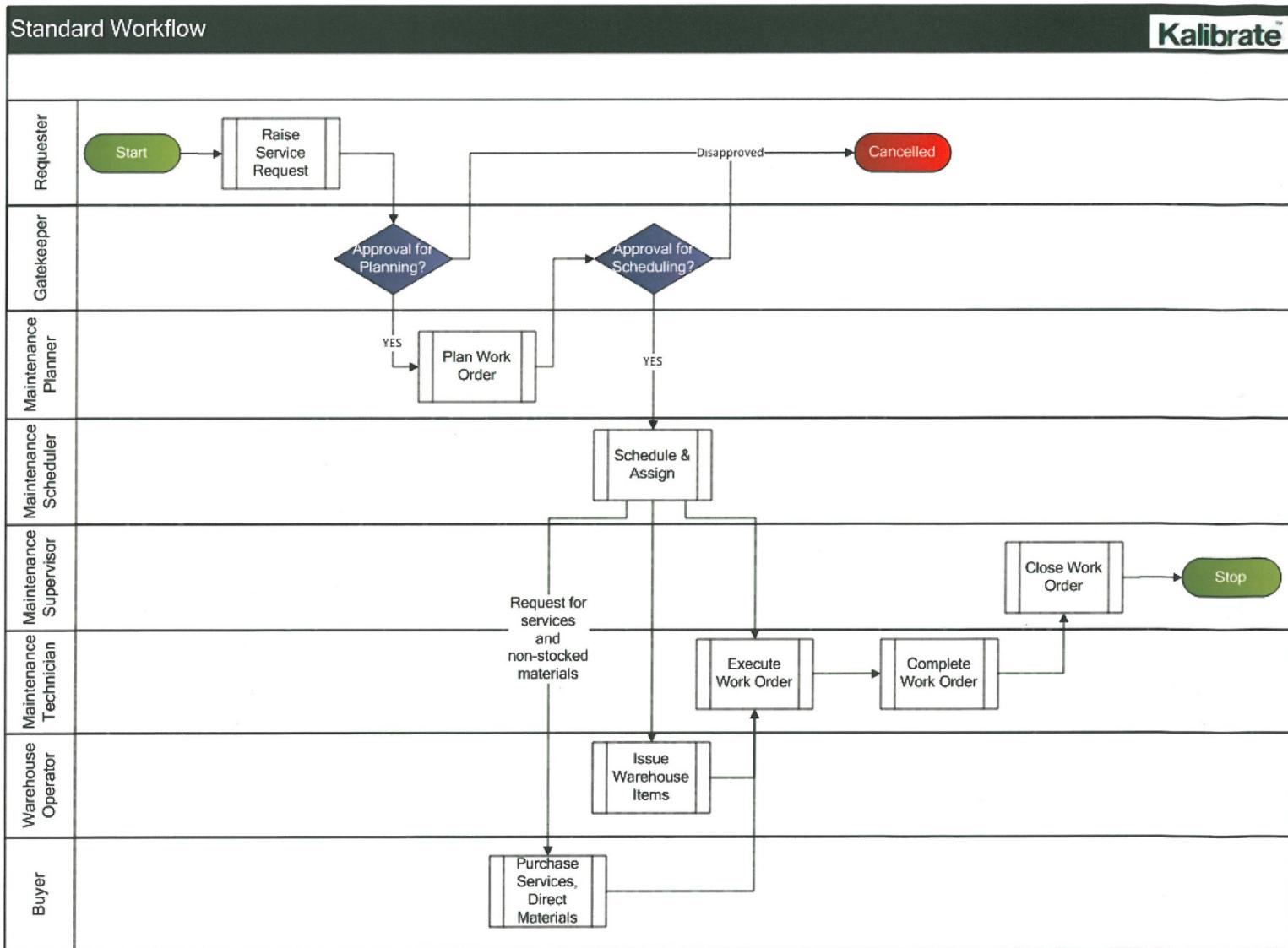
| Asset Management	Work Management	Work Planning	Materials Management	Procurement Management	Contract Management
Asset Management	WO Tracking	Job Plans	Inventory	Purchase Requisition	Labour rate contracts
Location	Quick Reporting	Preventative Maintenance	Item Master	Purchase Orders	Lease/Rental contracts
Failure Codes	Labour Reporting	Master PM	Storerooms	Requests for Quotation	Master Contracts
Monitoring	Assignment Manager	Routes	Issues / Transfers	Companies	Purchasing cont
Meters	Activities and Tasks		Condition Codes	Companies Master	Warranty cont
Meter Groups	Service Request		Stocked Tools	Receiving	Terms & Conditions
			Service Items	Invoices	
				Terms & Conditions	
Financials	**Resources**	**Work Safety**	**Reporting**	**Security**	**Service Management**
Currency Codes	People	Safety Plans	Report Administration	Security Groups	Service Requests
Exchange Rates	Person Groups	Safety Hazards	KPI Manager	User	Self Service / Create Service Request
Chart of Accounts	Crafts	Safety Precautions			Self Service / View Service Request
General Ledger	Labour	Lock Out / Tag Out			Ticket Templates
Cost Management	Qualifications				
System Configuration	**System Configuration**	**Options**	**Options**	**Options**	**Integration Adapters**
Workflow Designer	Application Designer	SLA Manager	Mobile Inventory	Linear Asset Manager	Microsoft Project Adapter
Workflow Administrator	Escalations	Change and Corrective Action Manager	Mobile Work Manager	Maximo Asset Configuration Manager	Primavera Adapter
Actions	Cron Task Setup	Maximo Compliance Assistance Documentation	Calibration	Maximo Asset Navigator	Maximo Enterprise Adapter (Generic)
Roles	Email Listener		Spatial Asset Management	Maximo Calibration	SAP Adaptor
Communication Templates	Web Services Library		Maximo for Service Providers		Oracle Adaptor
Integration Framework	Object Structures				

Implementation = Fun
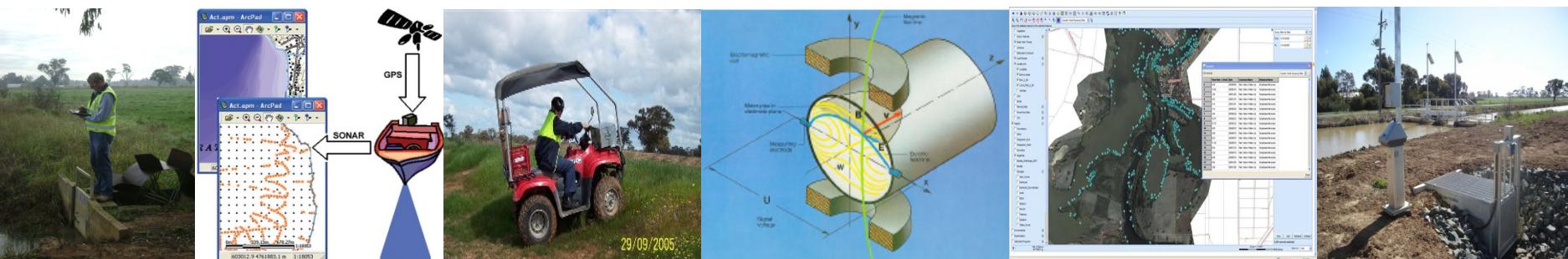
- G-MW implemented a standard Maximo implementation – *minimal customisations*

- We have trained over 125 users

- Changed work flows and procedures to suit Maximo – has caused some issues

- Upgraded our GIS version - *link server required*

- Spent time/money on Maximo Spatial, which impacted the development of our internal GIS

- After Implementation we went through business continuity and disaster recovery this required new servers, new environments

Maximo Work Flow

Standard Workflow — Kalibrate

Requester: Start → Raise Service Request → (to Approval for Planning?); Disapproved → Cancelled

Gatekeeper: Approval for Planning? ; Approval for Scheduling?

Maintenance Planner: YES → Plan Work Order ; YES

Maintenance Scheduler: Schedule & Assign

Maintenance Supervisor: Request for services and non-stocked materials ; Close Work Order → Stop

Maintenance Technician: Execute Work Order → Complete Work Order

Warehouse Operator: Issue Warehouse Items

Buyer: Purchase Services, Direct Materials

Benefits Realised to Date

- Common Asset Maintenance Information System

- Live Integration with the GIS (corporate maps)

- Integration with Corporate Document Management System

- Mobile computing

- Cost saving by using standardised systems

- Preventative maintenance now being scheduled

- Ability to complete work on modernised assets

A standout benefit to date

- During 2011 the area G-MW services experience significant flooding

- G-MW is part of the overall incident Management Team includes SES, Police & Government Agencies.

- Previous system of work, relied on work of mouth, MS Excel, Whiteboards and Emails to work out what the issues were, were they were, priority and who was doing it

- We used Maximo to help in this process

# 2012 Floods
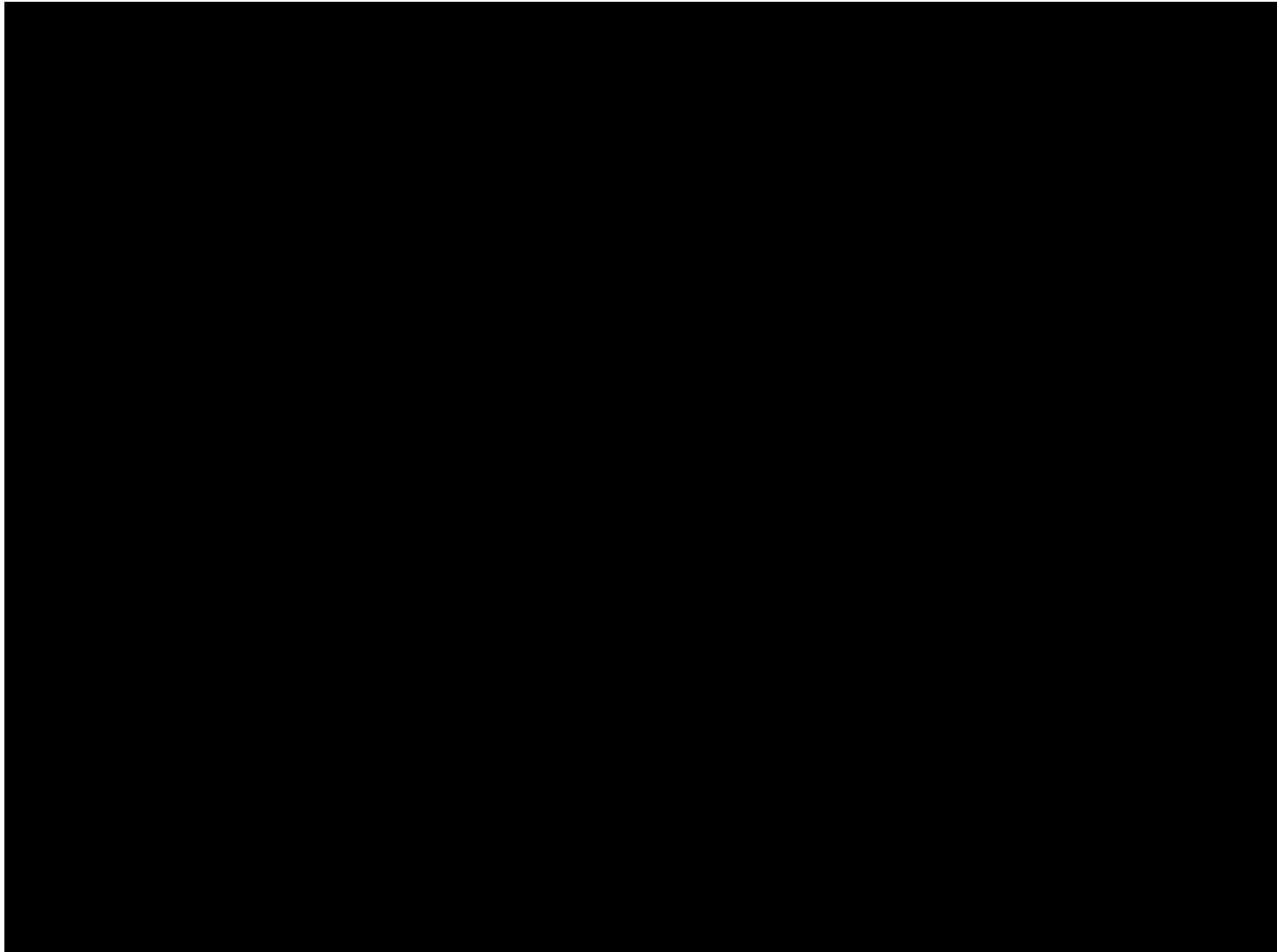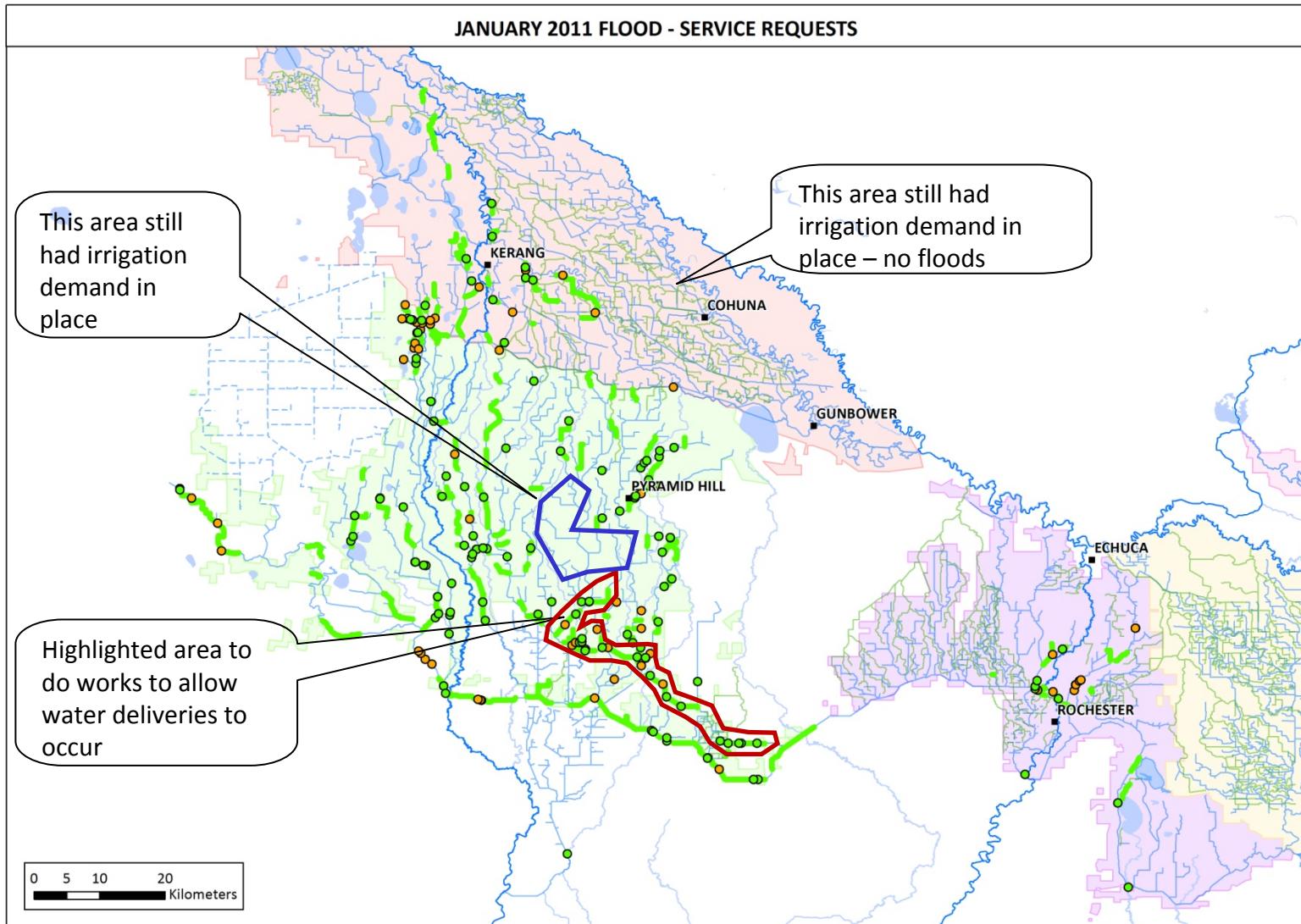
Flood Damage to Levees
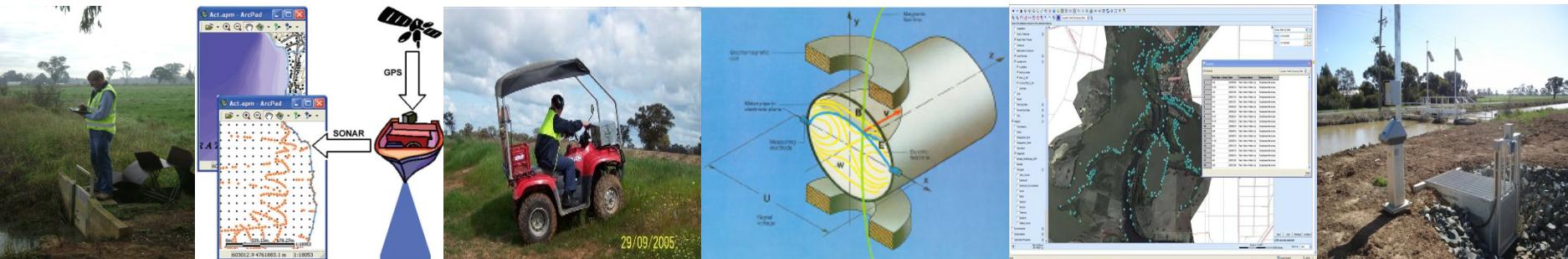
Simple Process

- Due to flood urgency, we received service requests from all manner of staff and customers

- We accepted them in any form, but we logged them in Maximo as service requests

- We set up a simple classification to meet G-MW flood incident risks (Extreme, High, Medium Low)

- We accepted photos and then linked them to service requests

- Work Orders were raised from these service requests

- Using the GIS integration we were able to link to customer information and our irrigation scheduling system to provide real time display of issues

- All done in 2 days

What it looked like

Goulburn-Murray Water

JANUARY 2011 FLOOD - SERVICE REQUESTS

This area still had irrigation demand in place

This area still had irrigation demand in place – no floods

Highlighted area to do works to allow water deliveries to occur
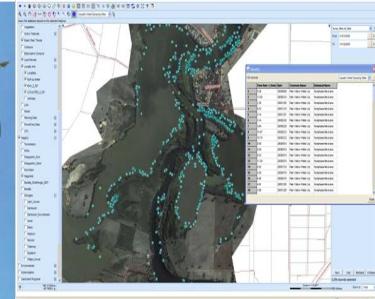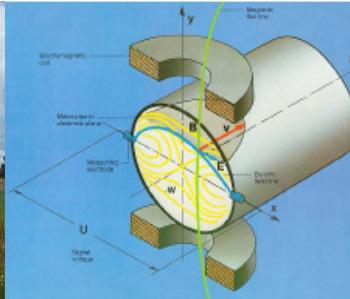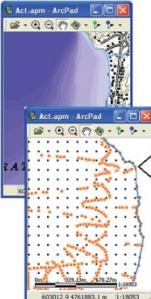
- These floods were localised

- Due to this we had situations where customers wanted supply of water when supply channels were damaged upstream

- Using the integrations we could see issues, prioritise and contact customers and notify them of delays, issues.

- As we completed works we could mark supply channels back in service, which was posted to the internet on a daily basis for customer information
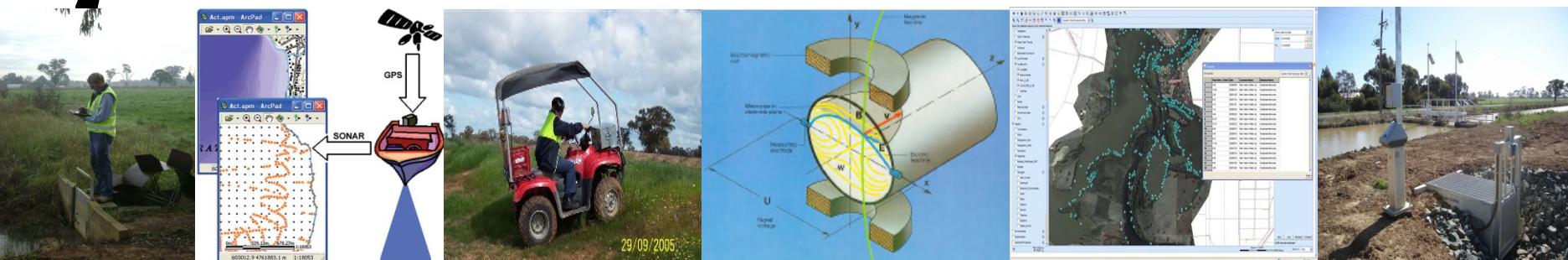
- We have been able to use the work orders
  - To justify claims for insurance costs,
  - Dispute / agree flood damage court actions,
  - Claim costs from Government for "flood works"

A Quirky Outcome
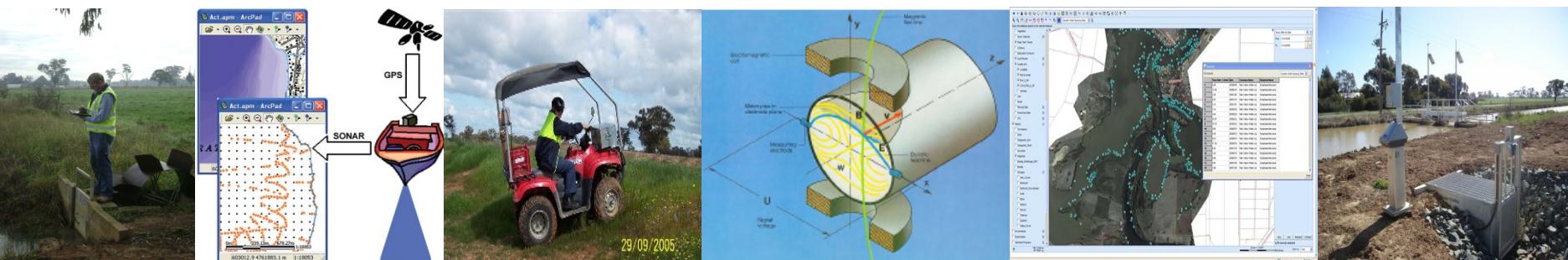
- During this event senior management became more aware of the flexibility and capability of Maximo

- Since then they have continued to ask "can it do this as well", the answer mostly is yes, usually with a bit of configuration and more training

- From the Maximo Administration point of view this has been a great side benefit.

Benefits to Come

- Single point of truth for all asset related information

- Turn by turn navigation (same as Navman/Tom Tom)

- Preventative maintenance

- Mobile technologies to increase efficiency

- Reduce inventory stocks by smart ordering

- Service level contracts

- Meeting customer needs for timely information

- Integration with SCADA system alarms

Next on the EAM Journey

- Full mobile integration between GIS and Maximo
- Training
- Additional integration with Financial Management systems
- More Training
- Integration with a whole of life model to truly allow for "what if" modelling
- More Training
- Maximo 7.5
- More Training

- The Asset Team recently received this email from one of the maintenance planners

- *"A service request was recently put in that a gearbox was required for SP739 but no other details were provided, in the past this would have required a site visit by one of our guys but when the Maximo Asset register was checked it contained all the details to replace said gearbox- model, ratio etc. From an Electrical/mechanical perspective this is the real value add of a well put together maintenance system, Beautiful stuff"*

- Whilst the journey is long and some times painful the rewards are there and they do come....eventually