Getting the Most Out of AM Tools
The manual starts with basic asset management principles and works through to practical steps for implementing advanced asset management systems within your organisation.

The 2006 manual contains sections outlining asset management practice in NZ, AUS, SA, UK and US. Loaded with informative case studies, and presented in an easy to use format, the International Infrastructure Management Manual is the ultimate reference document for any asset manager.
PAS 55 is the British Standards Institution's (BSI) Publicly Available Specification (PAS) for the optimized management of physical assets – it provides clear definitions and a 28-point requirements specification for establishing and verifying a joined-up, optimized and whole-life management system for all types of physical assets. Now internationally recognized, PAS 55 is proving to be an essential, objective definition of what is required to demonstrate competence, establish improvement priorities and make better, clearer connections between strategic organizational plans and the actual day-to-day work and asset realities.
Three ISO draft documents, known as:
• ISO 55000 Asset management – Overview, principles and terminology
• ISO 55001 Asset management – Management system requirements
• ISO 55002 Asset management – Application guidelines
CUPSS is a free, easy-to-use, asset management tool for small drinking water and wastewater utilities. CUPSS provides a simple, comprehensive approach based on EPA's highly successful Simple Tools for Effective Performance (STEP) Guide series. Use CUPSS to help you develop:
A record of your assets;
A schedule of required tasks;
An understanding of your financial situation;
A tailored asset management plan.
Asset Management not an Isolated Effort

Often Listed as a Strategic Goal & Initiative (directly & indirectly)

- Best Practice – Becoming Legislated Requirement
- Goal is Long–Term Sustainability
- Requires In–Depth Awareness of Condition & Performance, Risk and Criticality
- Demands Justified Capital and O&M Budgets
- Documentation Requirements
- Reporting and “Gap” Closing
- Accomplished through a variety of “tools”
The Basis for MR3 Decisions

- Level of Service
- Risk/Criticality
- Avoided Cost
- Decisions Need Data
Asset Management Information Flow – General

- Operations Processes & Requirements
- Information Systems
- Asset Decision Processes
- Future Capital Needs
- New or Replacement Capital Assets
Asset Management Information Flow

- Operations Processes
- Comprehensive Master Plans for Future Asset Needs
- Regulatory Requirements
- Capacity and Reliability Assessment
- Condition Assessment
- Discretionary Needs
- Constraints

Future Capital Needs

Information Systems

Asset Decision Processes

New or Replacement Capital Assets
Asset Management Information Flow – Information Systems

Operations Processes
- Comprehensive Master Plans for Future Asset Needs
- Regulatory Requirements
- Capacity and Reliability Assessment
- Condition Assessment
- Discretionary Needs
- Constraints

Information Systems:
- Asset Inventory
- Customer Information
- Financial Data
- Maintenance Mgmt.
- LIMS
- SCADA
- GIS
- Documents

Management Reports

Future Capital Needs

New or Replacement Capital Assets

Asset Decision Processes
Asset Management Information Flow – Asset Decision Processes

- Operations Processes
- Comprehensive Master Plans for Future Asset Needs
- Regulatory Requirements
- Capacity and Reliability Assessment
- Condition Assessment
- Discretionary Needs
- Constraints

Information Systems:
- Asset Inventory
- Customer Information
- Financial Data
- Maintenance Mgmt.
- LIMS
- SCADA
- Spatial Information
- Documents

Asset Management Procedures and Asset Standards

Analysis, Asset Needs Assessment and Prioritization

Asset Database(s)

Management Reports

Future Capital Needs

New or Replacement Capital Assets
Asset Management Information Flow – Outputs

- Comprehensive Master Plans for Future Asset Needs
- Regulatory Requirements
- Capacity and Reliability Assessment
- Condition Assessment
- Discretionary Needs
- Constraints

Information Systems:
- Asset Inventory
- Customer Information
- Financial Data
- Maintenance Mgmt.
- LIMS
- SCADA
- Spatial Information
- Documents

Asset Database(s)

Asset Management Procedures and Asset Standards

Analysis, Asset Needs Assessment and Prioritization

Management Reports

Capital Improvement Program

Rates and Fees

Long Term Asset Needs

Capital Improvement Delivery System
Asset Management “Tools”

- Web Resources (WEF, AWWA, WERF, WRF, NACWA, ISA……)
- CMMS
- GIS
- SCADA
- FIS
- Condition Assessment Tools
- EDMS
- AMI/AMR
- Security
- IT/Networks
- Public Relations – Customer Outreach
- Trained Staff (Mission Critical Operations)
CMMS as an Asset Management Tool

Data for Lifecycle Asset Management

- Who
- What
- Where
- How
- Why
GIS as an Asset Management Tool

Data for Lifecycle Asset Management

- Who
- What
- Where
- How
- Why
SCADA Data for Lifecycle Asset Management

- Anomaly Detection – rapid, visual, explained
- Alarm Management
- Response
- Intervention
- Remediation
- Prevention
- Restoration
- Education – Documentation
FIS as an Asset Management Tool

Data for Lifecycle Asset Management

• Who
• What
• Where
• How
• Why
Your In-Plant Analysis Kit

Hand held Ultrasonic Analyzer

Infrared Heat Detection
Analog Technology

Hand Oil Sampling Pump
Collection Bottle Sampling Form

Hand-Held Vibration Meter
Broadband Analysis

Metal Thickness & Coatings Testing
Ultrasonic Detection

- Hand held Ultrasonic Analyzer
- Electrical Fault Detection
- Pipe Leak Detection
- Heat Exchanger Tube Leak Detection
- Bearing and Lubrication Fault Analysis
Oil Analysis

Hand Oil Sampling Pump
Collection Bottle Sampling Form

Wear Metals suspended in oil

Contamination materials captured on filtration paper
EDMS

- Who
- What
- Where
- How
- Why
AMR/AMI

- Who
- What
- Where
- How
- Why
Security/IT/Web Resources

- Who
- What
- Where
- How
- Why
- Standards
- Policy
- Procedures/Practices
- Integration
One Application to the Rescue?

- General ledger
- Asset cost
- Accounts payable
- Equipment requisition
- Inventory
- Reporting
- Accounts receivable
- Human Resources
- Payroll
- Work orders
- Service orders
- Time keeping
- Customer billing
- Cash receipts
- Collections
- Meter reading
- Conservation

- Planning & Scheduling
- Receiving
- Fleet Maintenance
- Mapping
- As-Built Documents
- Easements
- Permits
- Engineering
- New services
- Rehabilitation
- Asset depreciation
- Taxes
- Training
- Regulatory requirements
- Dispatching
- Asset replacement cost
- Purchase orders

- Pump run-time
- Vibration analysis
- Water level
- Flow requirements
- USA locates
- Vehicle location
- Asset location
- Water analysis
- SSO's
- Customer Information
- Chlorine residual
- Camera inspections
- Invoices
- Pressure alarm
- PDM
- BOM
- Minimum stock quantities
CMMS to FIS

- Manage timesheet labor data
- Gather costs of improvements or extending asset service life
- Apply cost of labor, material, contract labor/services and new acquisitions to work orders (and thereby, directly to assets)
- Roll-up asset costs from CMMS to Fixed Assets
- Collect detailed asset cost data, condition, service life for GASB34
- Link FIS fixed asset register and CMMS asset register
- FIS tracks depreciated value and expected/remaining service life to CMMS
- CMMS and Fixed Assets provide the total asset life cycle cost (LCC)
- Track cost of maintenance, purchases, new construction, contributed assets
- Make informed CIP decisions based on criticality, condition, priority, asset class, maintenance history, etc.
- Support procurement activities for M&O inventory
- Properly report and track inventory quantities and costs
- Properly record material receipts to support accounts payable
CMMS to GIS

- Link linear, buried infrastructure to (or as) CMMS assets
- Asset and nameplate data linked to GIS asset features
- Work order history linked to GIS asset features
- GIS asset features link to material lists, safety hazards, permitting requirements and photos
- Spatial selection of assets by attribute (condition, criticality, etc.)
- Spatial analysis for scheduling and assigning work
- Enable location based analysis of historical work activities
- Provide mapping data to CMMS users to more effectively manage linear assets
CIS to GIS

- Customer data linked to GIS features
- CIS meter data linked to GIS service point features
- CIS consumption linked to GIS service points
- CIS service request history linked to GIS location
- Service requests grouped by GIS locations for scheduling and screening for duplicate service orders
- Geospatial and mapping data to CIS users for more effective management of customer assets and service connections
- Spatial display of meter-reading routes
- CIS data to GIS users
- Reconcile CIS billing services to GIS services
Customer service requests link to CMMS maintenance work orders
Current data and work status available to customer service agent
Provide history of a customer line/meter, etc.
Provide history of linear infrastructure assets
Closing CMMS work order closes related CIS service request
Customer data elements link to CMMS work orders
Provide meter inventory to work orders (e.g. battery replacement)
Provide meter, register, changes to CIS for billing update
Enterprise management integrates systems and functions to allow unified management of assets and capital.