

# What's New

Updates to a number of iBOS products have been released recently. Some of the new features are summarized for each product.

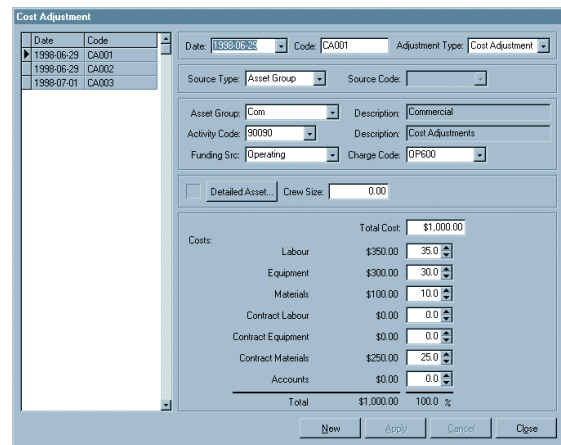
## MMS

### Cost Adjustments

This little known feature has been available in MMS for several releases. The cost adjustment screen is used to:

- Enter the cost of work directly for:
  - ◆ Contract payments.
  - ◆ Account costs (the accumulated value of miscellaneous purchases).
- To adjust the cost MMS estimates to that reported by the Agency financial system.

Each "cost adjustment" is identified by an Adjustment Type' e.g. Contract Payment. Cost adjustments are written directly into the DWR database. Adjustment type is shown in the Crew Name column of DataViews so are easy to identify and analyze.

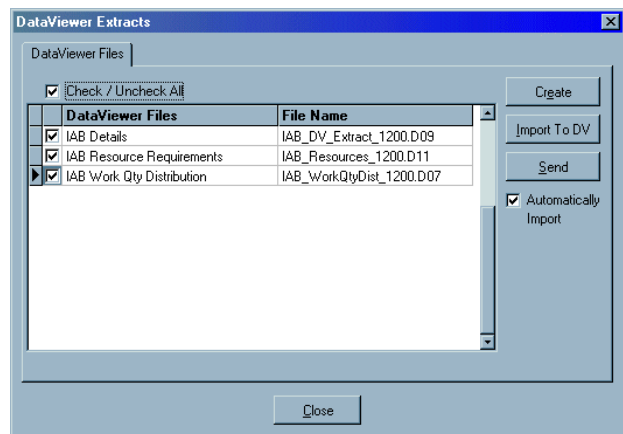


The screen is ideally suited to entering contract payments, allowing you to enter the exact amount of the payment and the amount of work that was done. By using this screen, contractor specific LWAGS do not have to be created.

More information on this feature can be found in the Cost Adjustments section of the MMS User Manual.

### DataViewer Extracts

The extract process from the Interactive Budget (IAB) and the Year End Forecast (YEF) has been enhanced to multiple select the extracts to create instead of selecting and creating them individually. Some extracts take some time to generate. Using the new feature, all extracts that are required are selected. Once the process starts, it continues to completion unattended. This feature is described in the section titled Budget or Year End Forecast Extract of the MMS Utilities Manual.



The Resource Requirements extract is enhanced to display the quantity of each resource used and the cost by period in addition to the quantity of the resource needed. A new extract has been added to both the IAB and YEF to show planned work distribution by planning period.

A number of new views are added to the MMS DataViewer Configuration. The new views are summarized in the document titled MMS Enhancements2\_0\_3 that is distributed with this release. The document is installed in the c:\Amax\ folder.

## Custom DWR

The equipment unit list screen is modified to add a Commonly Used checkbox to the right of the Unit Number. Pick lists in the DWR are modified so that commonly used units appear alphabetically at the top of the pick list. Units not commonly used are listed alphabetically after.

The Show Commonly Used Only checkbox above the equipment selection grid, filters the grid to display only commonly used units when checked.

More information on this feature is found in the Equipment Unit List section of the DWR section of the MMS Utilities Manual.

## PM & Repair Codes

The feature is added to Custom DWR. The feature allows for equipment repair and preventative maintenance to be captured in MMS. MMS then prepares a report that is used for data entry into the Agency Fleet Management System.

The PM Code and Repair Code are accessed from the Edit, Names menu in MMS. Both are system lists and cannot be modified by the local users. The PM screen is shown to the right. The Repair screen looks and operates similarly.

Line #	Equipment Code	Equipment Description	Unit Number	PM Code	PM Description	PM Comments	Hour Meter	Repair Code	Repair Description	Repair Comments	Type
1	2003	Vacuum	V002				0				E
2	2003	Vacuum	V003				0				E
3	2004	Fertilizer Spreader	Hand				0				CE
4	2005	Skid Steer Load	K001	DRV	Oil change of trans, diff		128	Bra	Brake System		E
5	2006	1/2 Ton Pickup	A001	LUB	Chassis & Components		0				E
6	2006	1/2 Ton Pickup	A002				0				E
7	2006	1/2 Ton Pickup	A003				0				E
8	2007	Tandem Truck	T001				0				E
9	2007	Tandem Truck	T002				0				E
10	2007	Tandem Truck	T003				0				E

The PM dialog is shown to the left. The dialog is called from a button on the Custom DWR screen located to the right of the equipment button. The placement of the button implies that the PM data is DWR specific, however, this is **not** the case. The PM data is Crew/Date specific. The PM data is entered from any line on the DWR. If the button is pressed on any other line, the data is displayed

and can be edited.

More information on this feature is found in the section titled Preventative Maintenance Reporting of the DWR section of the MMS Utilities Manual.

## IAB & YEF Filter

The ability to filter the Interactive Budget and Year End Forecast screens by Asset Group has been added. The filter is called from the View, Set Filter menu option. The Asset Groups in the version display in a multiple select list. Any number of Asset Groups can be selected.

## Cancel A Project

A feature to cancel a project has been added. The following applies:

- The action is called from the right click menu on the project.
- The project can be cancelled only if there are no DWRs (including Cost Adjustments) that reference the Project.
- A Master Project cannot be cancelled. This action is not relevant to a Master Project.
- Projects that are in an IAB or a YEF can be cancelled, even if the version is approved.
- Cancelled projects do not appear in pick lists and cannot be used in MMS.
- The project remains in the database. It is not deleted and can be edited (however changes have little effect since it cannot be used).
- Cancelled projects can be restored. Right click menu option and select the Reactivate Project option.
- Cancelled projects appear on reports with the background of the Project Name shaded. Reports affected are those based on Interactive Budgets and Year End Forecasts. Cancelled projects are included for completeness.
- The words Project Cancelled appear in **Bold Red** in the header of the first page of the project.
- The message "Project Cancelled" appears in Navigator tool tips. Display the tool tips to quickly identify cancelled projects.
- Cancelled Projects remain in existing IABs and YEFs. They are retained for completeness of the Version and in case the Project is restored. Project data can be edited in the Version.
- Cancelled Projects are not included when a new IAB or YEF is created. If the project was in an approved budget, it is not copied to a new YEF. If the project is reactivated, a new YEF must be created to include the project.
- Cancelled Projects do not appear in scheduling, even if the Project is part of an approved budget. Existing entries are removed from the Available Work list, the Alternate Work list and the Work Sheet list. The removal is permanent from the Alternate and Work Sheet. If the project is subsequently reactivated, the entries appear in the Available list only. Project activities have to be rescheduled.

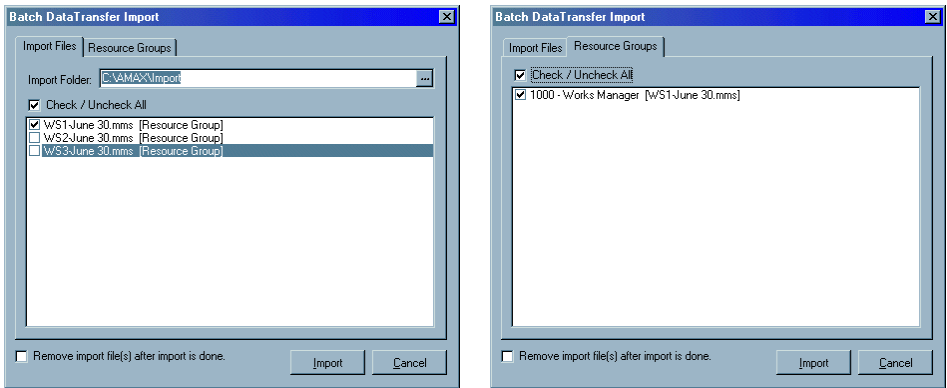


More information is found in the section titled Cancel a Project in the MMS User Manual.

## Data Transfer- Batch Import

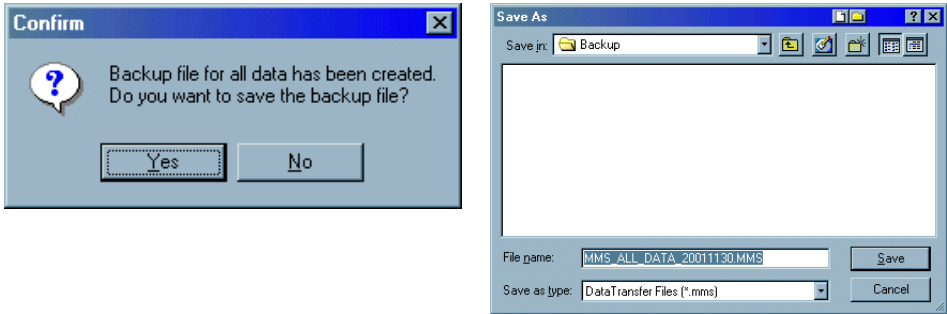
Data Transfer has been enhanced to batch import data from many Resource Groups. Batch import only works with Resource Group and System List export files. The method is used when you need to import many Resource Group Transfer files at the same time. Batch Import allows you to select multiple files and

the Resource Group(s) from within each file. Once the import is started, all selected Resource Groups are imported.



**Figure 1: Batch Import**

Data Transfer automatically creates a back up of your data using the Export for Backup routine. If problems occur during the import process, Data Transfer aborts the import and restores the backup. At the end of a successful import, Data Transfer asks if you want to save the backup with your original data as shown in the left side of the figure below.



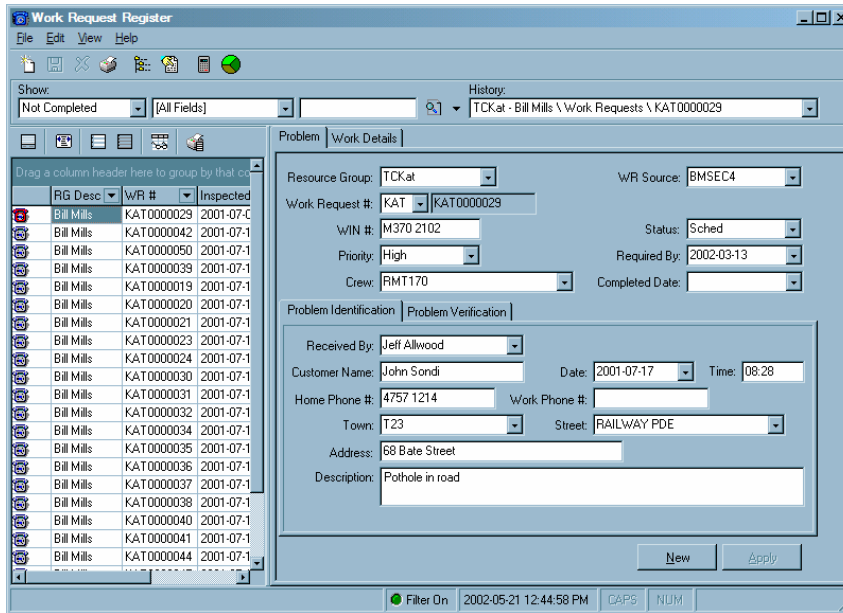
More information is found in the section titled Batch Import of the Data Transfer section of the MMS Utilities Manual.

## Work Request Register

Work Request Register (WRR) is a standalone tool that reads and writes to the MMS database. This tool has extended functionality compared to the MMS Work Request screen. It is useful in the situation where many customer requests are received and it is desirable to have automated means to manage the requests better. Features of WRR include:

- Additional fields compared to the Work Request screen. The most notable of these is the addition of a Required By date. This optional field allows easier management of requests that must be completed by a specified date.
- A new style navigator.
  - ◆ The navigator is very customizable:
    - Users can interactively select the fields to display.
    - Users can set the grouping to create a tree of view of the requests.

- ◆ An enhanced navigator search has been added to search any field for specified text.
- ◆ The navigator can be filtered using “in column” filters.
- ◆ An “in column” search feature is added. Simply click on a cell in any column and start typing. The navigator automatically scrolls to the first matching record. Key strokes jump to the next or previous match.
- ◆ The navigator can be printed for a quick reporting.
- ◆ The navigator display color coded icons for easy identification of requests that are overdue, nearing the due date, active, and completed.

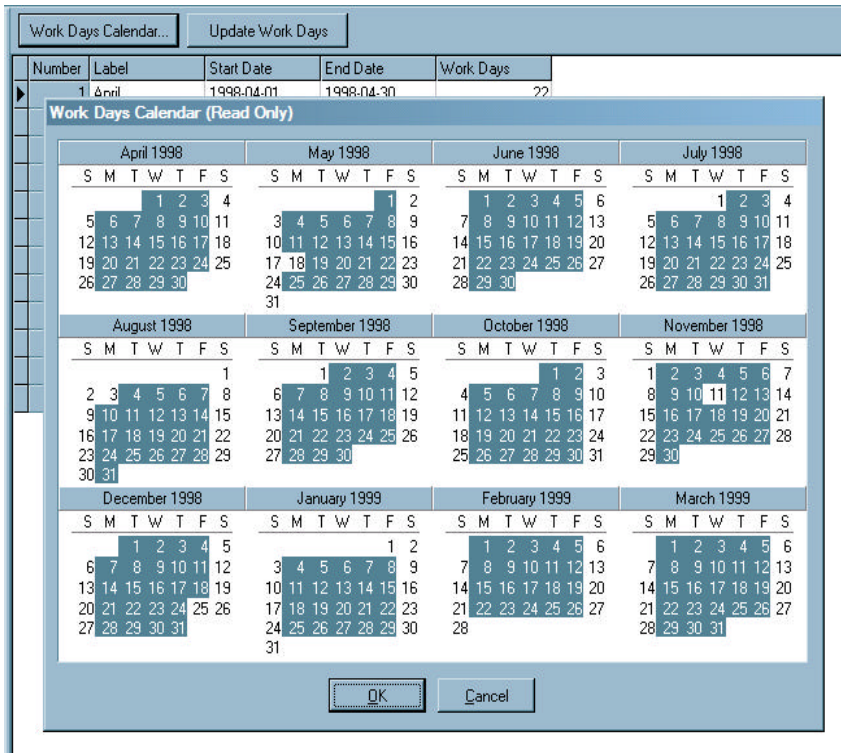


WRR has recently been enhanced to include a Compulsory Intervention Level (CIL) asset condition. When the condition of the asset has deteriorated so that the CIL has been reached, there is a business requirement that the problem must be fixed within a specified number of work days. WRR is enhanced to set a Required By date using an Agency defined response time.

## Work Calendar

As part of the WRR enhancement a Work Calendar has been added. The Work Calendar is a system list that applies Agency wide. It shows working (blue background) and non working days (white background) in the fiscal year. WRR sets the Required By date using Work Days.

A button is added to the Planning Periods screen view the Work Calendar. Another button has been added to the screen to calculate the work days in each period from the Work Calendar. Use of this feature is optional.



A number of views have been added to the MMS DV Configuration to support use of Work Request Register.

## Asset Register Professional

### Navigator Filters

The Navigator Filter is accessed using the navigator filter icon. The feature operates in Viewer mode of Asset Register. It filters the nodes in the navigator. It is used to limit the data displayed in the tree. The Export Form Data option exports data visible in the tree, therefore this feature provides for a filtered export.



#### Notes:

- Filters are not available when data is attached to a System node. System nodes do not create a navigator tree.
- Filters are form specific.
- The feature is only active when a data node or group node is selected for the form. The icon is not active when a folder node is selected.
- Filters can be saved and reused.
- If a filter is active when the form closes the same filter is reapplied when the form opens the next time.
- A filter can be set but not saved. The temporary filter is retained until ARPro is closed or it is cleared.
- If a Saved Filter is active when ARPro closes, the same filter is reapplied the next time the form opens. This does not apply to temporary filters.

- Pressing the icon opens the filter dialog. Operation of this dialog is described in the section titled Filter Dialog of the ARPro Designer and User Template documents.
- Memo fields are not available to filter.
- The field list in the filter dialog only lists fields from the tables where fields are selected for the navigator.

More information on this feature is found in the section titled Navigator Filters of the ARPro Designer and ARPro User Template document.

## Export Form Data

ARPro has been enhanced to export and import data from a master detail data relationship. The option is called Export Form Data and Import Form Data. This option is used to export the data tables for the selected navigator form. This option:

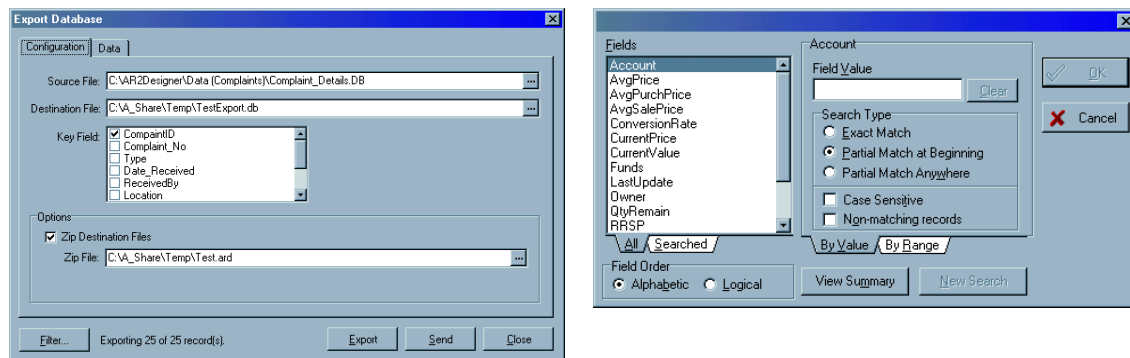
- Exports data stored in single table or in master/detail tables. This option must be used when the form uses master/detail.
- Lookup tables are not included.
- If the navigator is filtered, only filtered data is exported.
- The export includes master records that meet the filter condition and all detail records for those master records. There is no way to exclude some of the detail records for a master record.

More information on this feature is found in the sections titled Export Form Data and Import Form Data of the ARPro Designer and User Template manuals.

## Export & Import Database

The filter operation of the Export & Import Database has been enhanced to use the filter dialog. The filter is set by pressing the filter button on the Export of Import dialog as shown on the left side of the figure below. This opens the filter dialog shown on the right side of the figure.

When a filter is set, the number of records that will be exported or imported and the total records in the database is displays to the right of the filter button.

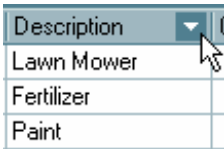


Operation of the filter dialog is described in the section titled Filter Dialog of the ARPro Designer and User Template documents.

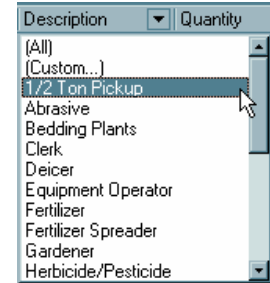
## Data Viewer

A new release of DataViewer is being prepared and is expected to be released around the end of March 2002. The feature list has not been finalized yet, however the features described below will be included in the new release.

### In Column Filters



In-column filters are used to filter data in the grid. In-column filters are available for all column types except memo columns (filters are set on memo fields using the filter dialog). A down arrow (shown to the left) displays on the right side of each column heading. Clicking on the down arrow opens a drop down list to specify the filter for the column. As shown in the figure to the right, the drop down list includes all unique data values for the column. A value can be selected from the list, or the [Custom ...] entry can be selected to enter a simple compound filter. A filter can be set on as many columns as needed.



When an in-column filter is set, a summary of the filter criteria displays at the

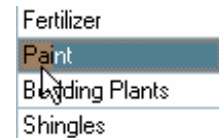


bottom of the grid (as shown to the left). A multi column filter can be cleared one column at a time by opening each column list and selecting [All] or by pressing the x symbol located to the left of the

filter summary.

### In Column Search

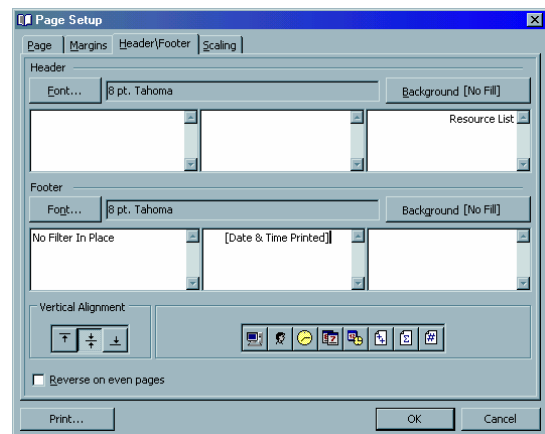
The in-column search feature lets you easily and quickly find a particular value in the column without changing the order of the data. Simply select any cell in the column and start typing the value you are looking for. As you type, focus jumps to the record with the closest match and the characters you type appear in reverse image as shown in the figure to the right. Some important keys:



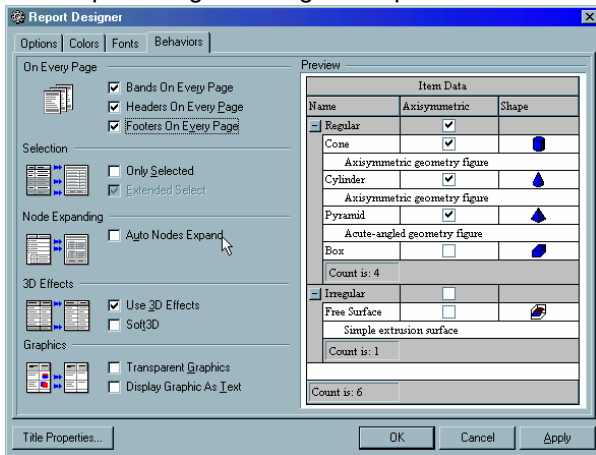
- Backspace: removes a typed character from the search string.
- Ctrl+Enter: finds the next match.
- Shift+Enter: finds the previous match.

### Print Grid

The Page Setup New features are available including a revised Header/Footer setup. The dialog is shown to the right. There are three zones for both the header and the footer. Each zone is set separately.



The report designer dialog has improved functionality. Notable of these is the ability to specify whether grouped nodes are expanded. When the Auto Nodes Expand checkbox is not selected, groups that are collapsed are printed collapsed.



Another useful feature is the ability to shade every second row in a printout. On the Report Designer screen, select the Odd/Even Rows Mode from the Draw Mode drop down list on the General tab. Then set the desired shading color on the Colors tab and/or the desired font color on the Fonts tab.

## Life Cycle Costing

Version 1.0.0 of the Life Cycle Costing iBOS tool is just released. The tool assists managers to determine the lowest long-term cost from a number of different options. The options are compared at a variety of user selected discount rates. The Net Present worth (NPW) and the Equivalent Annual Cash Flow (EACF) is calculated at each discount rate.

The best preservation strategy for any asset is the one that is the cheapest over the “whole life of the asset”. Often that is not the cheapest treatment right now. Rather, it involves choosing the treatments that are the most cost effective over the longer term. Choosing the best preservation strategy means considering:

- The long-term life of the asset.
- The expected life of each treatment applied.
- What treatments are applied when it fails again.
- How user costs are affected by the condition of the asset (optionally).

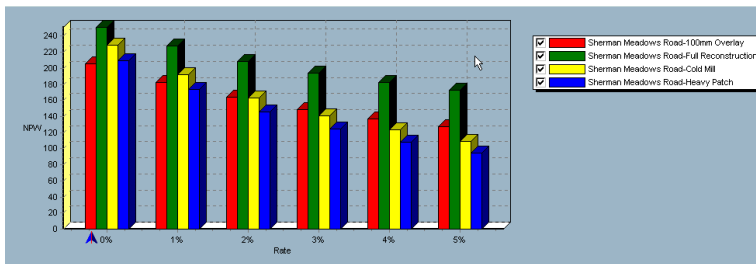
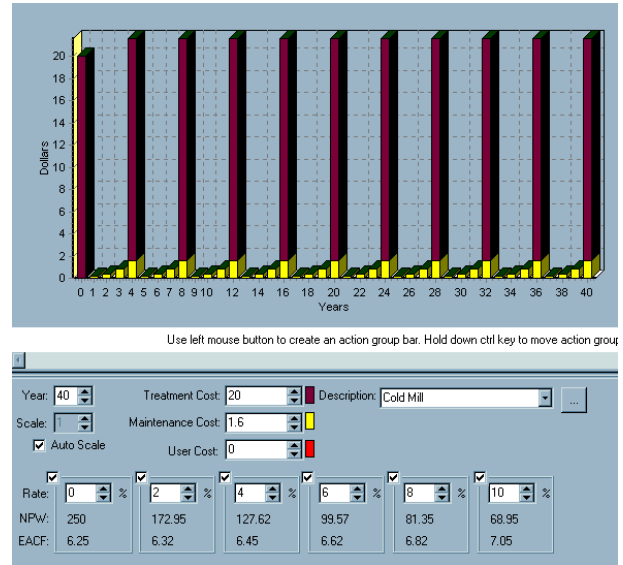
Life Cycle Costing assists you to choose the best preservation strategy from several feasible ones, however you must have the following information about each strategy before you start:

- Feasible treatments.
- Cost and life of feasible treatments.
- Maintenance costs based on asset condition and use.

The objective of Life Cycle Costing is to cost effectively complete a project, such as upgrading a particular asset (e.g. road, bridge, building) to a defined standard. Usually there are a number of different strategies you could use to carry out the project. A strategy is simply a proposed set of treatments for the expected life of the asset.

You use the LCC program to build a profile for each strategy. A profile is simply a cash flow diagram represented by bar charts of treatments and cost versus time. An example is shown to the right. The example includes both treatment costs and maintenance costs. User costs can also be included if desired.

Because the same treatments can be used in more than one profile or that the application sequence of the treatments may repeat within the same profile, LCC lets you save treatment combinations (treatment and associated cost) as an Action Group. A saved Action Group can be recalled and used whenever you need it. Using this method, you can build a library of treatments, actions groups and profiles that can simplify and reduce your effort for new LCC evaluations.



A cost profile is prepared for each option. The options are compared using the Compare Strategies screen. An example is shown to the left. Using this screen, it is easy to determine the lowest cost strategy at each discount rate.

## What's New

A number of software releases have occurred recently:

- DataView
- MMS
- Asset Register Professional
- Life Cycle Costing (new product)
- PPT

## New Development Platform

VEMAX has undertaken a new strategic direction for software development. We have switched to a new development platform using Microsoft's .NET development environment. Programming is being done in C# (C Sharp) using a SQL Server database.

.NET is Microsoft's latest technology that provides for a managed execution environment eliminating memory leaks, access violations, and versioning problems.

For more information about .NET, click on this link: <http://www.microsoft.com/net/defined/default.asp>

New products are being developed using the new platform. Existing products will be converted over the next few years. We will continue to support existing products that use the Delphi/Paradox development platform until the products are converted.

## Software Development

VEMAX IT staff are currently working a several new programs. These include:

- DataViewer Enterprise – work has started on the DV Enterprise version. DV Enterprise reads data from SQL Server databases. Other features have not yet been finalized. Details will be provided as that occurs.
- AMPS/WRR (Annual Maintenance Planning System/Work Request Register). Development of this software is being undertaken as a project that will develop the software and implement it in Water & Sewer branch of Public Work in the City of Saskatoon. Design work is nearing completion and software development has started using the .NET platform.

The AMPS/WRR project is following the VEMAX standard development procedure. The Design Team consists of both City of Saskatoon staff and VEMAX staff and will be implemented in Water & Sewer as part of the development project. The business environment is robust therefore a robust product design is needed. The robust design means that the software can be implemented and will operate effectively in a wide variety of situations.

## *Annual Maintenance Planning System*

### Overview

AMPS is being designed to meet the unique needs of urban agencies for their management of the maintenance business. AMPS performs the same functions as the planning component of MMS, however has key differences specifically designed to operate in an urban environment. The table below summarizes the differences between AMPS and MMS.

AMPS	MMS
One organization unit	Many organization units
Flexible resources	Predominately dedicated resources
Planning at a strategic level and/or detail level	Plan at a detailed level (activity)
A planning hierarchy	Many Asset Groups and projects
One set of resources	Resources assigned to each organizational unit
One set of LWAGS	LWAGS for each organizational unit
Extensive editing features in budget	Budget a snap shot in time. Setup errors must be fixed in setup and a new budget created

Version can be created at any level of the hierarchy	Version includes selected asset groups and projects
Many budget versions can be approved creating a combined approved version	Only one budget can be approved
Security functional	Security organizational
Provision to specify a percentage of work is performed when overtime rates apply	Does not handle overtime directly

The intent of AMPS is to provide a robust planning tool for agencies that do not need the full capability of MMS. AMPS is a simple tool that:

- Produces an annual plan.
- Interacts with other software to provide full maintenance functionality.

As a result AMPS covers the planning component of MMS. It does not include features for scheduling or work capture directly. These features are provided by:

- Setup: AMPS Control Panel
- Planning: AMPS
- Work Identification: Work Request Register
- Work Scheduling: Work Request Register
- Work Capture: Import from the Agency financial system or capture using a custom DWR
- Year End Forecast: AMPS

## Strategies

AMPS introduces a new concept of Strategies to the iBOS maintenance suite. Strategies are the primary planning component in AMPS. A strategy is a set of activities that are performed to satisfy the work requirement. An example of a strategy is "Repair Waterline Break". Example activities needed for the repair could be:

- Excavation
- Repair Water Line
- Backfill
- Repair/Replace Concrete Works
- Repair Paved Road Surface
- Landscape

The quantity of work for each activity needed per unit of the strategy is defined for planning purposes. The quantity of each activity is calculated from the quantity of the strategy planned. Activities (LWAGS) continue to be used for work capture.

The introduction of strategies gives AMPS a "strategic" planning capability that does not exist in MMS. Tracking is at the activity level is to leverage the benefit of LWAGS in incremental performance improvement.

# Work Request Register

Work Request Register (WRR) is the tool used to identify required work for scheduling purposes. Work Request Register operates as a standalone utility. WRR operates in one of two modes:

- Recorder: this mode is used by a complaints desk that receives public complaints and enters them into the WRR.
  - ◆ Recorder mode captures sufficient information to identify the complaint, the individual making it and problem location.
  - ◆ A tie to the Agency GIS is proposed to automate identification of the problem location.
  - ◆ As much of information as possible will default to ease data entry. Examples include, date time, person taking the request, request number (auto generated using a WR prefix).
  - ◆ A tie is contemplated to automatically capture information from the phone system. Caller name, phone number, address, date, time, # of rings before the call is answered are examples of data that may be able to be provided through the telephone system.
  - ◆ When a complaint is received it is assigned to a designated Work Request Coordinator to evaluate. There can be many Coordinators assigned each who is responsible for a particular category of work. In MMS, these will be a RG identifier. In AMPS, this will be the root level of the Planning Hierarchy.
- User Mode: this mode creates new requests or processes the requests created in recorder mode. The mode is used to:
  - ◆ Verify requests.
  - ◆ Define activities needed to satisfy the request.
  - ◆ Assign work to different parts of the agency.
  - ◆ Monitor progress of the requests.

## Features of WRR:

- Creates requests directly or imports requests using custom routines (specific to the data source). Two potential sources of import are:
  - ◆ An Agency complaints management system.
  - ◆ Required work identified through asset condition rating.
- A strategy is assigned to the WR. Activities and work quantities can be generated from strategy setup.
- Interacts with Scheduling. Specific activities in the requests can be assigned to other Organization Units. The activity is “pushed” directly in their schedule. The schedule screen developed for WRR will display as “new” requests so they are easy to see.
- A Required By date can be optionally specified for each request. When the field is used, WRR uses color-coded icons to identify the requests nearing the due date (agency setting for the number of days) and those that are overdue.
- Uses colored icons to convey information about the requests. Categories identified are:
  - ◆ Imported: to identify the requests added through an import. This feature is to assist the WRR Coordinator to identify the requests are reassign them to the Organization Unit responsible to do the work.
  - ◆ New: identify requests that are newly created in WRR.
  - ◆ Near Due.
  - ◆ Overdue.
  - ◆ Active: the color is switched to active for new and imported requests when they are viewed. This function allows the WR Coordinator can easily determine if requests they have assigned

have been viewed. This is an important feature as some requests may be time sensitive and the WRR Coordinator needs to know whether or not the person responsible is aware of the request so they can follow up if needed.

- ◆ Completed.
- Template requests can be created in the system and a new request can be created from a template or copied from an existing request. This recognizes that work is repetitive in maintenance. When requests are imported or created in a recorder mode “missing” detail can be supplied from the template.
- A tie is proposed to the Agency GIS to obtain a map display of any set based on the visible requests in the Navigator. The navigator can be filtered using multi column filters therefore a map can be created showing just the requests that are of interest. The initial link will be to ERSI Arc products (the GIS used in the City of Saskatoon).