

# IMMS Operating Manual

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IMMS 3.0, released in 1<sup>st</sup> quarter 2010, introduces map-based graphical control to the IMMS user interface. It also has multi-language capability, improved international compatibility, improved flow reporting, streamlined communications, and other features requested by users and system operators.

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## Compatibility Overview

IMMS 3.0 is compatible with Microsoft Windows XP, Vista, and Windows 7. Users may require Administrative levels of permission to perform certain software setup functions, depending on their local policies.

A minimum of 512 MB of RAM is recommended. Screen resolution must be at least 1024 x 768.

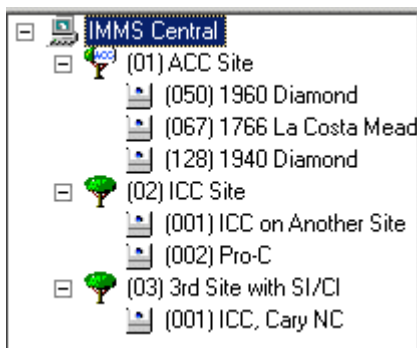
There are no Macintosh or Linux versions available for IMMS.

IMMS is designed to operate the Hunter Industries model ACC family of controllers.

IMMS is also able to interface with some earlier models of controllers (ICC, Pro-C, SRC) via the Site Interface or Controller Interface communications options. These controllers will not have full functionality with all software features, but will respond to downloads from an IMMS system.

ACC family controllers must be grouped onto separate Sites from older SI/CI interfaces. The ACC controller does not use these interfaces (it has internal Com modules instead). ACC communications are much faster than SI/CI devices, and their communications are not compatible with the SI/CI family of products.

If a system will have both ACC controllers, and SI/CI interfaces to Hunter's other controllers (ICC, Pro-C, and SRC), do not mix them in a Site even if they are physically close to one another. Use the software tools to organize the old and new controller types on their own Sites, and the computer will adjust automatically for the correct types of communications.



## Summary of Changes

IMMS has a whole new set of features associated with the ACC controller. Most of these are enabled by the full two-way communications with that controller family.

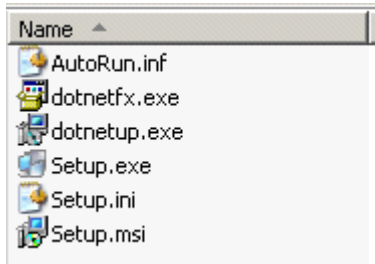
IMMS is also compatible with the earlier SI/CI family of IMMS interfaces. There are several new features for these products as well.

## Installing IMMS Software

**Create a back up** of the main database (File, Database, Create Backup) if upgrading an existing IMMS installation.

Insert CD in controller drive. If installation does not begin automatically after a few seconds, locate the file on the CD called Setup.exe and double-click it.

If installing from a downloaded zip file, extract the zip file and double-click Setup.exe.



The Wizard will guide you through the steps to install (click Next to finish any screen and move to the next one).

Hunter recommends that IMMS be installed in the Program Files directory on the local hard disk.

If you are upgrading from IMMS 1, do NOT install IMMS in your old IMMS directory. Allow it to install in its own suggested directory. Additional steps to work with your existing database follow after the Unlocking section.

When the Wizard is complete click the Finish button. The installation program should close.

The installation will replace the earlier version of IMMS, but should open with the existing data.

If this is a new installation, a blank database will be created.

Copy the Installation ID, and call or email Hunter Technical Support to obtain an Unlocking Code. The IMMS-ET unlock codes are unique to each computer installation, and will be required even if you already have an unlocked version of IMMS 2 only. This code will only be required once for IMMS-ET, but the ET portion of the software cannot be used until this is obtained.

Requirements for Unlock Code:

- Installation ID

- Exact Model of IMMS you are unlocking.
- User name and contact information.

It is not possible to provide an Unlock Code without all of this information!

Contacts:

Email: [www.asktheexpert@hunterindustries.com](mailto:www.asktheexpert@hunterindustries.com)

North America: 1 (800) 733-2823

International or local: +1 (760) 591-7383

Telephone support is available (with possible delays, depending on activity) from 6:00AM - 5:00PM Pacific Standard Time, Monday through Friday.

## **Networks and Administrators Info**

Administrator privileges are required to install IMMS, but not to operate it. See “Permissions” for some workarounds for restricted network operation.

The software may be operated with standard User Privileges, but custom security policies may block use of the program or cause loss of data. Questions on custom security policies should be directed to Hunter Technical Services.

IMMS is NOT designed as a shared, multi-user application. It will coexist with most networks, but it is specifically designed to operate and communicate from a single host computer.

IMMS does not use TCP/IP settings and is not designed for internet or intra-net operations.

IMMS requires .Net 2.0 framework to be installed, which can be separately sourced from Windows Update if necessary.

Microsoft SQL Server will be installed as part of the IMMS operating environment.

IMMS will be installed in the local hard disk and will create its own directory under Program Files. The database will be created in a sub-directory under IMMS2 called Data, and we strongly recommend that the database be kept in this location. The .bak backup data may be copied to the network for storage purposes, but the live database should be resident in the Data folder.

IMMS will require an Unlock Code from Hunter Industries on start up. Moving the software to a new computer will also require a new Unlock Code from Hunter.

## **File Locations**

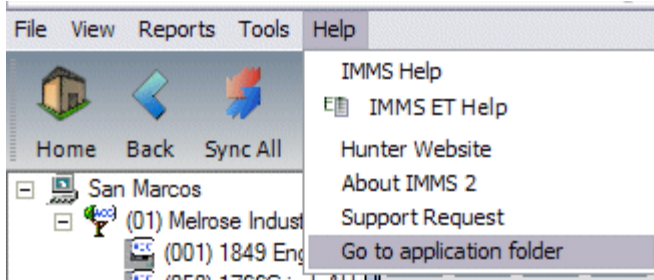
IMMS Help Manual

Beginning with IMMS 3, IMMS supporting files will be stored in a new location in Windows, to keep pace with Microsoft conventions.

The IMMS program itself will be installed in the Program Files location, as before.

All supporting files, including databases, will now be stored by default in Local Disk \Documents and Settings\All Users\Application Data\Hunter Industries\IMMS.

There is a link to this location under the Help menu item at the top of the IMMS screen.



If a previous version of IMMS had created the IMMS or IMMS2 directory under Program Files, the Data folder and its contents will be moved to this new location automatically.

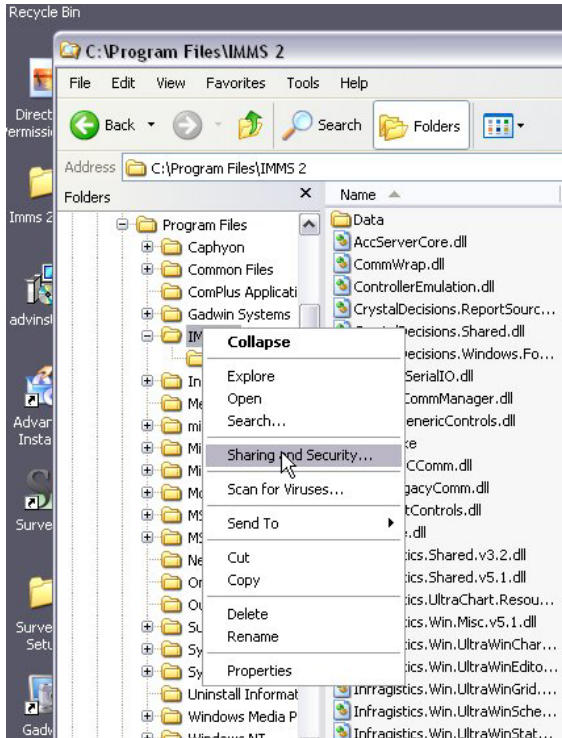
## Permissions

(Network errors or warning about log in status, permissions, etc. in networked environments – this section pertains to Windows XP but Windows Vista and Windows 7 may be similar.)

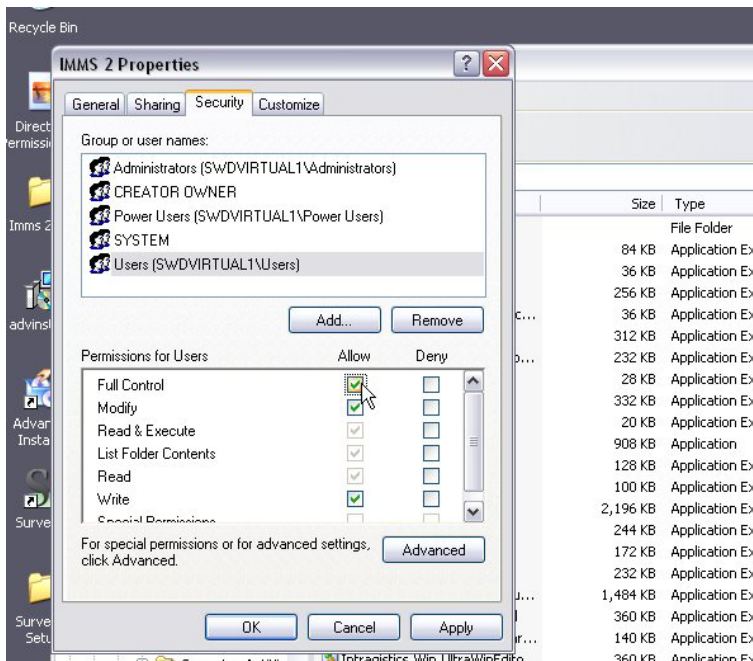
Administrative permissions in networks should not be required to operate IMMS. However, they may be required to install IMMS and complete the unlocking process.

A Windows User Account has limited file and system access if the file system is NTFS and not FAT32. In order to run IMMS 2 permission must be granted to the program directory and registry. The following steps will detail what must be done to grant access. The installation of IMMS and this procedure must be accomplished using an account with **Administrative** rights.

1.) Use Windows Explorer to navigate to the program folder which by default is **C:\Program Files\IMMS2**. Right click on the folder and select **Sharing and Security** as shown here.



2.) Select the Users group name in the upper portion of the screen and then check the full control box as shown below.



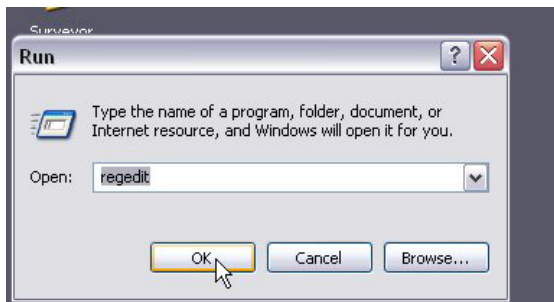
3.) Click **OK**. This sets the correct file permissions.



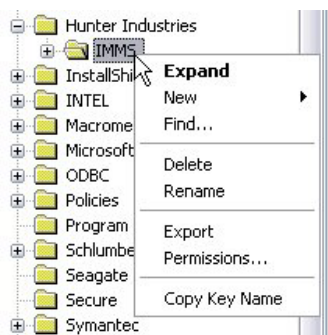
4.) Next, we must set the registry permissions. Begin by clicking the **Start button** and then clicking **Run...**



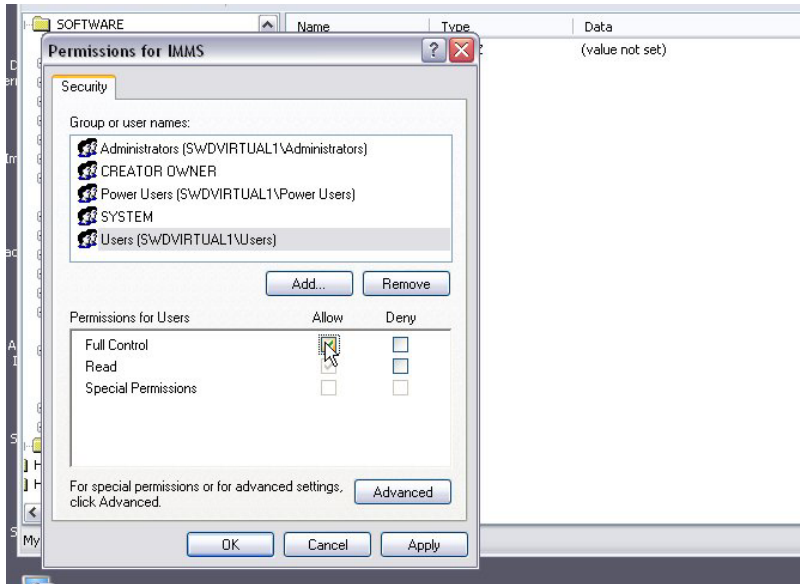
5.) Type **regedit** on the form and then click **OK**.



6.) Navigate to the Hunter Industries registry key **HKEY\_LOCAL\_MACHINE\SOFTWARE\Hunter Industries\IMMS**. Right click on the IMMS key and select permissions as shown here.



7.) Grant the Users group Full Control for the registry key and then click the **OK** button.



## If You Already Had IMMS 1 Installed (Upgrade steps)

IMMS will install in a new directory of its own, and will not automatically find your existing database.

IMMS should be completely compatible with your existing IMMS database. However, you should make a copy of the old database and store it in a safe place, “just in case”, to prevent loss of data.

Make sure that NO versions of IMMS are running before proceeding. Close any IMMS programs that may have been running, and open Windows Explorer.

In IMMS 1, the database is always called IMSdB.mdb. This file is located in your IMMS/Data directory. There are other files there with similar names, but this exact file is the true database.

Locate the file in Windows Explorer and right-click on it. From the drop down menu, choose (left-click) Copy.

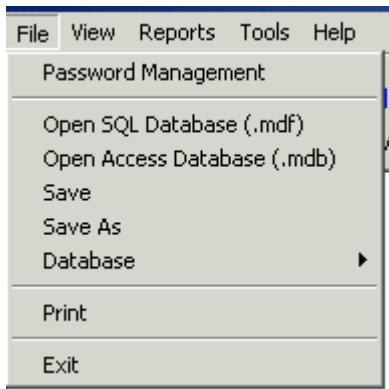
Right-click on the safe location you have chosen, and choose Paste. Verify that the file IMSdB.mdb appears in the new location.

Now, use the Windows Explorer view to navigate to the new IMMS directory. Under the IMMS folder will be a sub-directory called “Data”. Right click Data and Paste your original database in here, too (it should still be on the clipboard memory... if not, copy it again).

Open IMMS (double-click the new icon on the desktop).

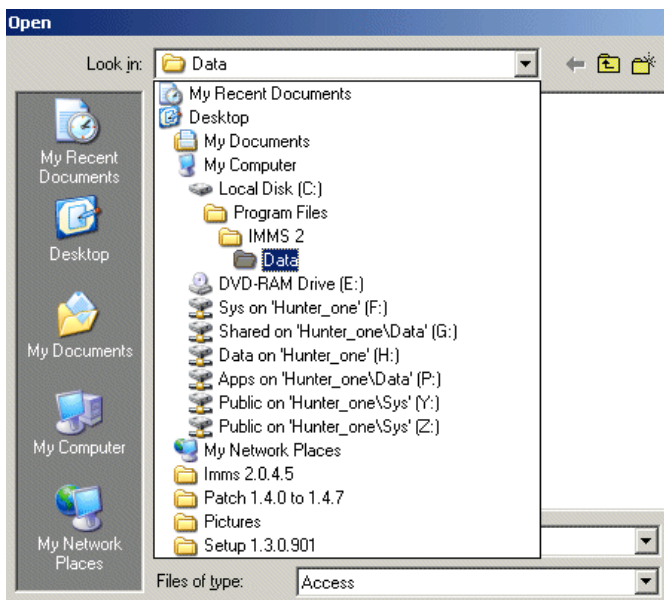
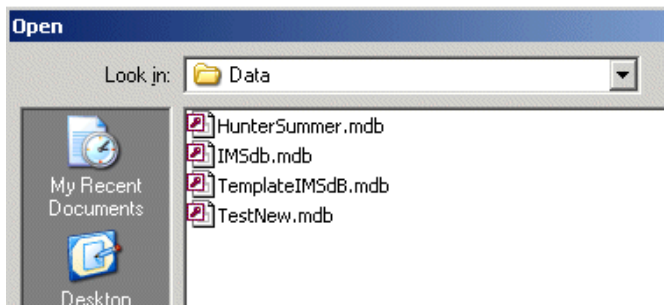
At the top of the opening IMMS Home screen, click File. A drop down menu will appear.

Click Open.



To use earlier databases, click the Open Access Database (.mdb).

This will open a “Browse” window, pointed to the IMMS directory.



Locate the IMSdB.mdb file you have copied there, and select it.

IMMS should now load your earlier database and be ready to work with it.

**Do not attempt to run later versions of IMMS, and IMMS 1, at the same time.**

It is OK to leave the earlier IMMS 1 installation on the computer for a while, as a backup. It cannot run at the same time as IMMS, however, since they will compete for the same communications resources, and may have unforeseen effects on databases, etc.

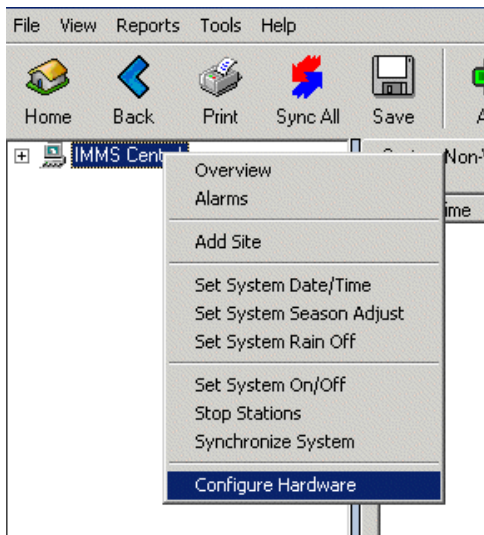
## Setting Up IMMS to Communicate

If this is a new installation with no pre-existing data from an earlier version of IMMS, IMMS will open with a nearly blank screen. This is the beginning of your new database.

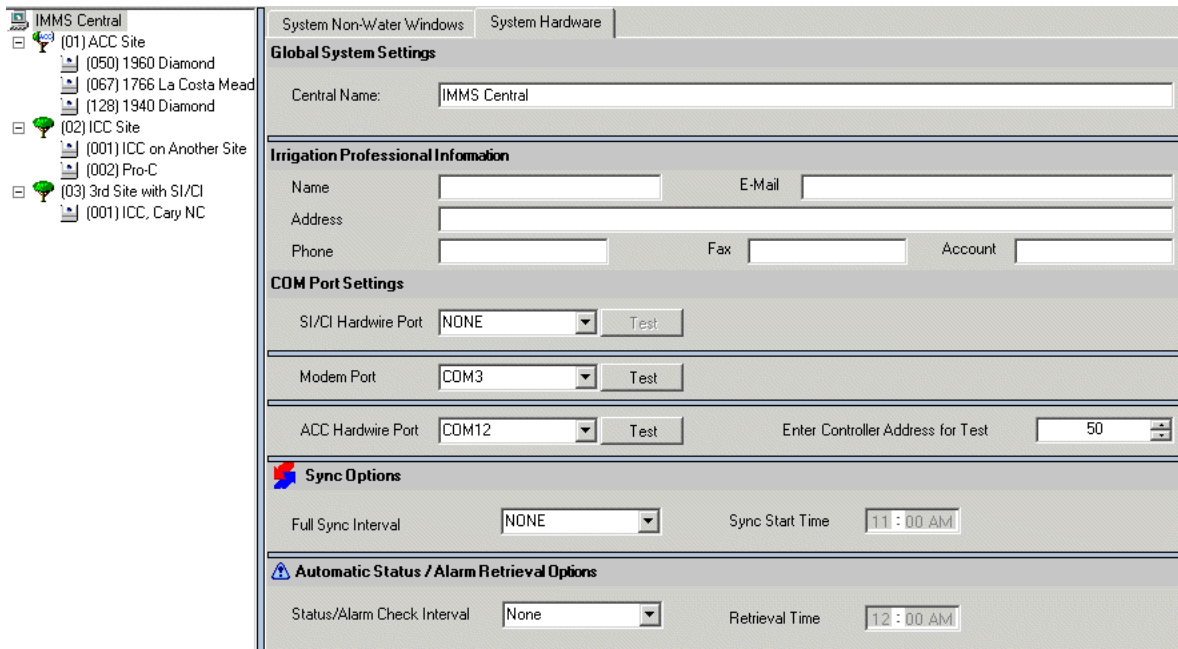
IMMS must be configured to communicate.

### System Hardware Tab

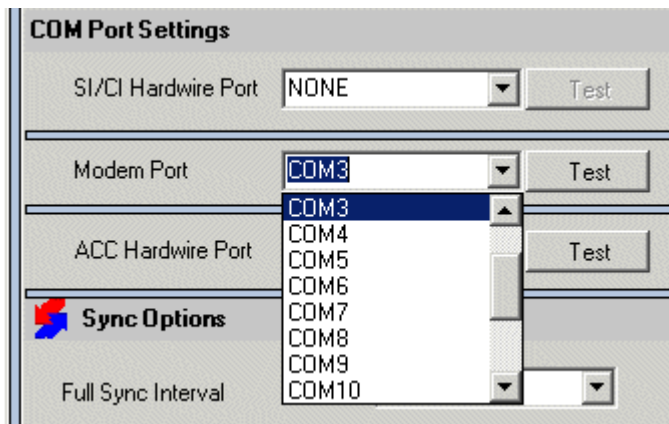
In the upper left area of the left window pane will be a single entry called IMMS System.



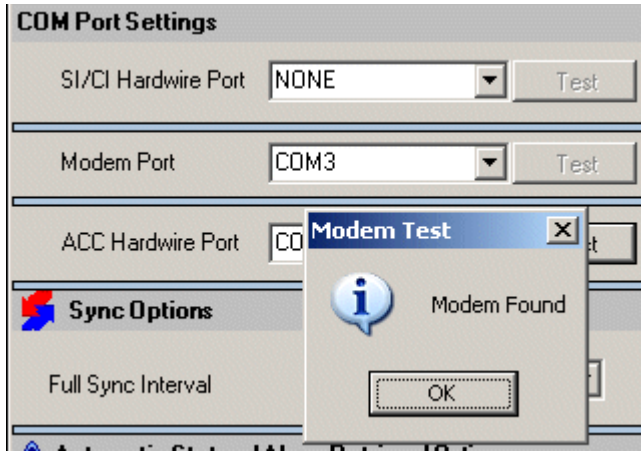
Right-click on the IMMS system and select Configure Hardware. This will open the System Hardware tab.



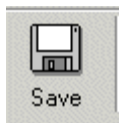
Modem: If you know your modem's Com port number, click the down arrow in the selection box and select it. Click the Test button.



A successful test will show "Modem Found".



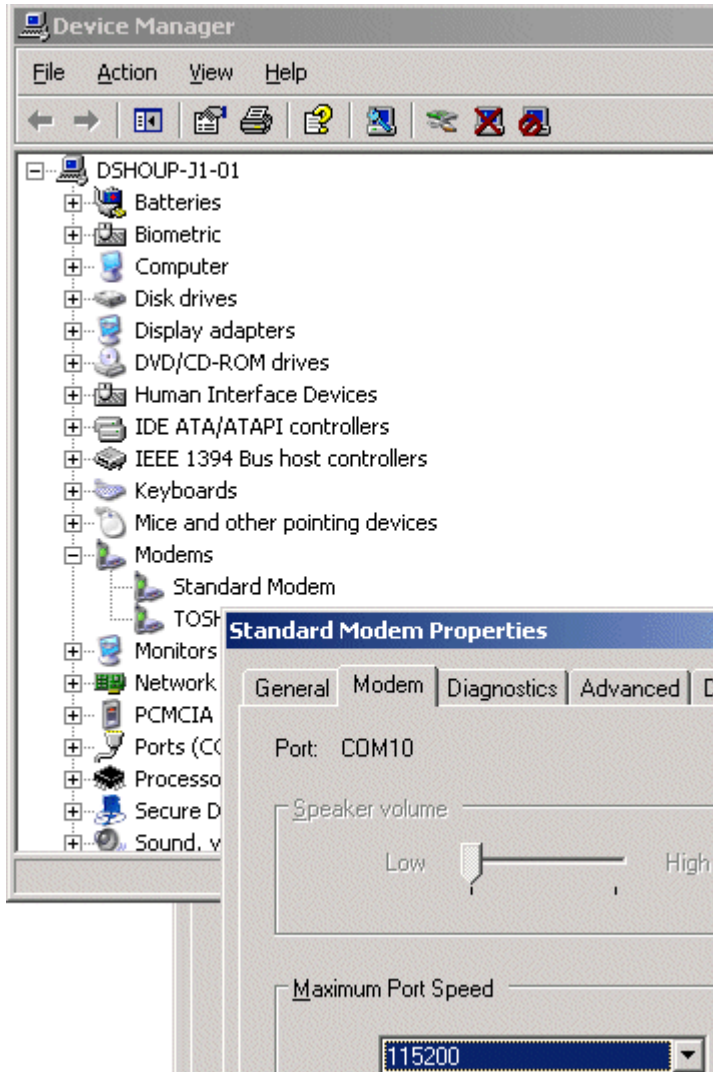
Click the Save button when this test is successful.



If the modem is not found, try another Com port and test again.

You can usually determine which com port the modem uses from Windows Control Panel. Normally this is located at Start, Settings, Control Panel, System, Hardware, Device Manager (a common shortcut on some computers is the Pause/Break and Windows flag buttons, pressed together).

Select Ports in the Device Manager and look for the modem com port setting.



Hardwire CCC (either): The next step requires a Site Interface (IMMS 1) or an ACC controller with a Com module, installed, connected, addressed, and powered up.

Locate the center section called COM port settings.

Choose the type of port (CCC hardwire, Modem, or ACC Hardwire) and make a selection from the drop down box.

If using CCC or ACC hardwire, make sure a CCC is present, connected, with power on.

If connecting to an ACC hardwire site, you must also put in a valid ACC address. The comm check needs to pass through the CCC, to a controller with a Com module installed and an address, to be valid.

Select a likely com port number and click the test button.

COM Port Settings	
SI/CI Hardwire Port	NONE <input type="button" value="Test"/>
Modem Port	COM3 <input type="button" value="Test"/>
ACC Hardwire Port	COM12 <input type="button" value="Test"/> Enter Controller Address for Test <input type="text" value="5C"/>

IMMS can potentially use 3 different Com ports from the computer, for various types of communications.

There is one possible serial port for IMMS 1 hardwired communications with a Hunter IMMS-CCC.

There is another possible port for the computer's modem, to reach dial-up (or cellular) locations.

There is a third possible port for hardwired communications to an ACC location.

ACC controllers may not share any hardwire communications with the SI/CI interfaces.

Each type (ACC or SI/CI) must have its own hardwired communications leg, its own IMMS-CCC, and its own Com port from the computer.

It is possible to have both types of hardwired communications at once. There can be one IMMS-CCC for the SI/CI hardwire connection, and another IMMS-CCC for the ACC hardwire connection, each using a different Com port from the same computer (this will always require two available Com ports).

This is the only way that these communications can coexist. The ACC controllers must be organized on different Sites than the SI/CI controllers.

Each Com port must be configured for the communications link to each type of site. When all are configured and have passed their communications tests, click Save.

Plugging a USB or serial connector into a different port on the computer will usually cause the previous com port setting to be invalidated, and a warning message will appear when IMMS is reopened. When connecting through a different port (this is common with laptop users), the com port may need to be selected and saved again.

## Sync Options and Alarm Status/Retrieval

The other important settings on the System level Hardware tab are the Full Sync interval and the Automatic Status and Alarm Retrieval.



IMMS now allows separate settings for full syncs and more frequent alarm/status checks. This allows the central to keep an eye on the system status with the least delay before alarm notifications, while keeping the costs of communications to a minimum.

These settings determine when, and how often, the software will communicate with each site in the field automatically.

You are not required to enable either of these options. If you only Synchronize manually and do not need to check for alarms, you may leave them set to None.

### Synchronization/Sync Options

The process of downloading irrigation programs to the controllers, and retrieving any important alarm data. This can be done automatically by the computer at various intervals, from once per hour to once per day. It can also be done manually at any time from the software.

**Sync Options**

Full Sync Interval: Daily Sync Start Time: 12:00 AM

**Automatic Status / Alarm Retrieval Options**

Alarm Check Interval: NONE, 1 hour, 2 hours, 4 hours, 6 hours, 8 hours, 12 hours

Retrieval Time: 12:50 AM  Get ACC Flow Totals at Alarm Sync

**Database Backup**

Backup Time: 9:58 AM

### Automatic Status/Alarm Retrieval

Automatic Status and Alarm Retrieval are quick looks at the controllers in the field, to see whether they are irrigating, have any alarms, or have been changed (since the last sync). These can also be set to run at automatic intervals (from every 10 minutes to once per day).

**Sync Options**

Full Sync Interval: Daily Sync Start Time: 12:00 AM

**Automatic Status / Alarm Retrieval Options**

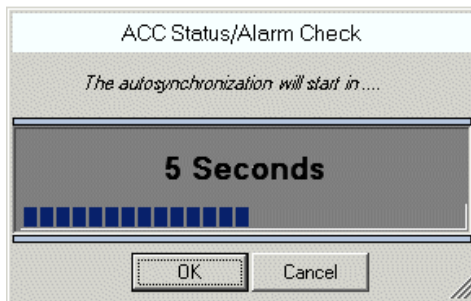
Alarm Check Interval: None Retrieval Time: 12:50 AM  Get ACC Flow Totals at Alarm Sync

**Database Backup**

Backup Time: None, 10 minutes, 20 minutes, 30 minutes, 40 minutes, 50 minutes, 1 hours, 2 hours

Full synchronization requires more time than simple status checks. In a multi-site system, each site must be dialed, data must be transferred in both directions, and the phone call must be terminated, one at a time. Large systems can require many telephone calls and a large amount of data, and all this takes time. The computer's modem is also unavailable for other applications when synchronization or other IMMS communications are underway.

Automatic Status will check more frequently for alarms but keep communications to a minimum. This will cause communications to begin, even if you working on IMMS when it is scheduled to begin. A pop-up window will notify you when the status check is about to begin:



### Database Backup

The system can be set up to backup the database once per day at a preset time, if the box is checked. This is strongly recommended. Choose a time at which your computer is likely to be running IMMS, and enter it after checking the box.

### Common Setup Problems

**Cannot locate correct Com port:** The Device Manager in Windows can help to locate the Com port settings for both the CCC and the modem. This is accessible via Start, Settings, Control Panel, System, Hardware, Device Manager. In some Windows XP configurations you can use the Pause/Break and Windows keys on the keyboard, pressed at the same time, to shortcut to the System Properties. Click the + next to Ports to see current available Com ports. For the modem, click the + next to Modems, locate the modem name, right-click on it and choose Properties. The Modem tab will usually display the Com port in use by the modem.

**Com port in use/unavailable:** A computer with a finite number of com ports may have them all used up by other devices. Some devices tend to grab com ports for their own use, and make them unavailable to other applications (some PDA sync programs are examples). These devices or their programs must be identified (the Device Manager is useful for this) so the ports can be freed up for IMMS to use. IMMS will use a com port whenever it is running, but when the application is closed, the com port is free again for other Windows applications.

**CCC Test failures:** When the test button is clicked, IMMS transmits through the CCC to a specific controller, and awaits a response. With an ACC system you must enter a valid controller address, or the test cannot pass. The CCC must be powered up, connected to the central computer, and also connected to a “live” controller with an addressed com module. If all indications are that the com port setting is correct but the test is not successful, check this entire “loop” of functionality. The CCC has lights for Transmit and Receive activity. If the Transmit light is active during the test, this generally confirms the com port selection, and the problem with the test may be the connection to the ACC, or an incorrect address for the ACC’s Com module.

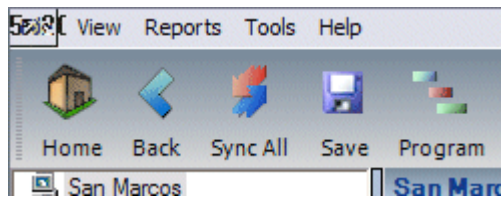
## Sites

Controllers must be on a Site in order to communicate. Creating a Site is the first step to setting up IMMS communications of any kind.

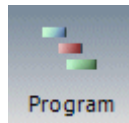
A Site is a controller, or group of controllers, having or sharing a single point of connection back to the central computer. Each Site has characteristics on its Hardware tab that tell the computer how to reach controllers at that location. Some IMMS systems only have one Site. Up to 100 Sites are possible. Each Site may have up to 100 controllers, sharing the communications with the computer.

### Add a Site

To create a Site, start at the Home page.



Click the Program icon on the toolbar (green computer screen).

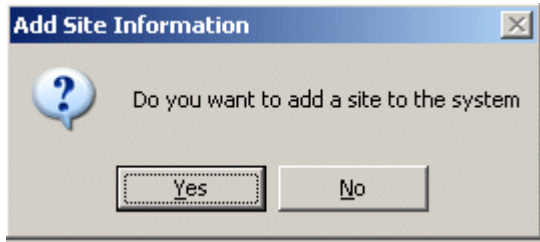


The toolbar will change, and show a green + icon for Add and a red X icon for delete.

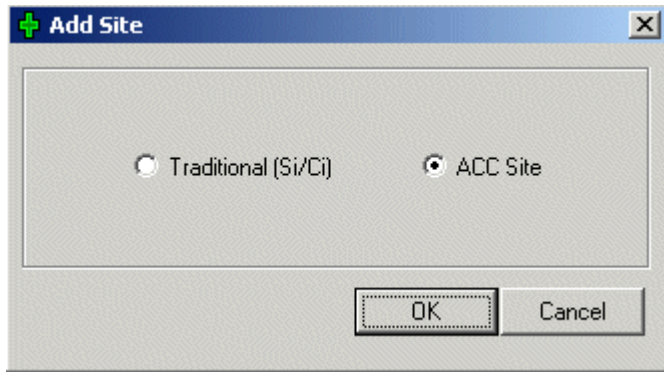


Click the + button to add a Site.

The Add Device window will appear, to ask whether you want to add a Site to the system (if you already have sites, it will ask whether you want a new Site, or a new Controller).



A window will ask whether this will be an ACC controller site, or a "Traditional" site.

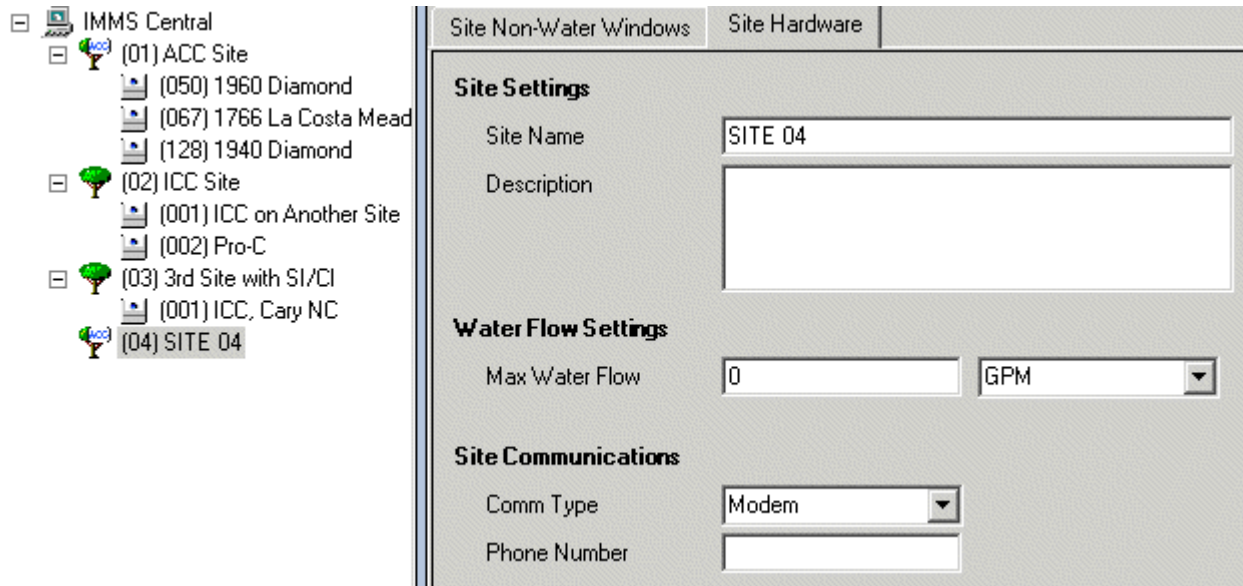


ACC controllers (including decoder versions) must be placed on ACC sites, and cannot include SI or CI type interfaces.

"Traditional" sites use the SI (Site Interface) and CI (Controller Interface) with ICC, Pro-C, and SRC controllers. They may NOT include ACC controllers.

Click the type of Site you need to create.

After selecting one of the Site types, the window will disappear and the Site icon will appear on the left side. The Site always looks like a tree. ACC Sites have a tiny "ACC" written on the tree.



## Site Hardware Tab

Right-click on the Site icon and choose Configure Hardware from the drop-down menu (if it did not already appear when the site was created).

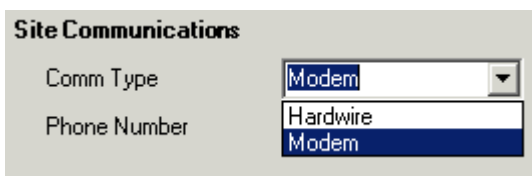
The Site Hardware tab will appear on the right.

Here you can change the name of the Site, and add descriptive notes of any kind about the Site.

The Max Water Flow information is not related to Flow Monitoring in the ACC controller, and it is not necessary to enter anything. This value is used in the verification function for estimated flow.

The Site Communications information is required. This will tell the computer how to reach all the controllers on this site.

Click the down arrow next to the Comm Type window and select either Hardwire, or Modem, from the list.

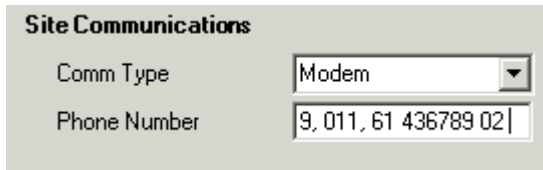


You may only have one Hardwire site for ACC, and one other Hardwire site for conventional SI/CI (this is only possible with two different CCCs, each connected to a com port).

You may have up to 100 Modem sites, or 99 plus 1 Hardwire site (or 98 + 2, if there are two CCCs).

Use the modem selection for any site you are going to dial-up. It does not matter whether the site will be POTS (plain old telephone service) or cellular GSM. "Modem" tells the computer it must dial a telephone number to reach the site, and the type of telephone is not important.

If you select Modem, the Phone Number window is activated. Enter the telephone number, including any dial out information required.



**Site Communications**

Comm Type: Modem

Phone Number: 9, 011, 61 436789 02

You may enter virtually any number of characters. This may be as short as a 1 or 2 digit extension, or a very long number including country codes and area codes, or a character to reach an outside line.

You may also enter a comma (,) to create a brief pause, if you connection requires it. You may enter additional commas to create a longer pause.

Click the Save button when the number is correct.

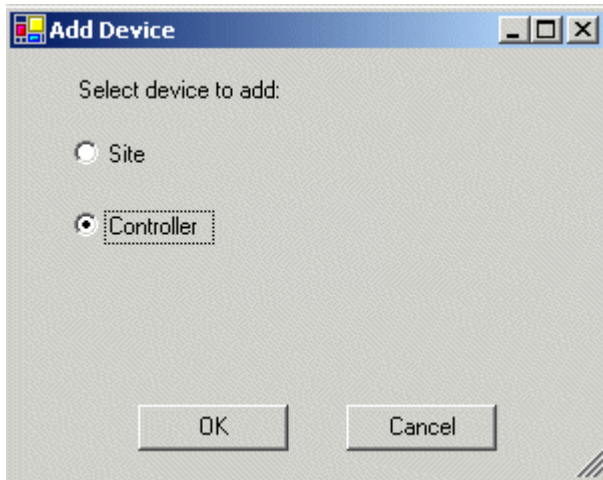
## Adding Controllers to a Site

Each controller will have its own icon, attached to the Site. This is necessary even if there is only one controller on a Site.

Click the Site on the left to highlight, and then click the green + button again to add a controller.

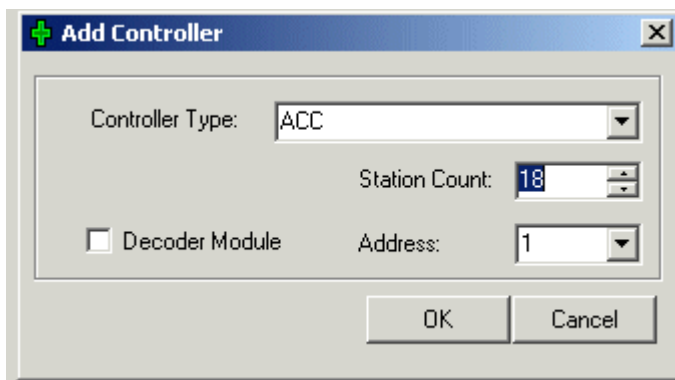


The Add Device window will appear. Select Controller.



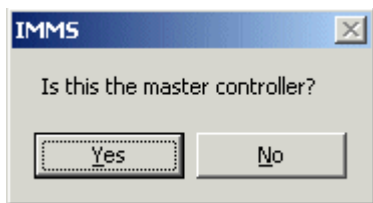
If you are adding to an ACC Site, the window will ask for the station count.

If the ACC is a decoder version (ACC99D, any version), check the Decoder box. This is important, because it will allow the software to display the higher number of stations in decoder controllers.



When the controller is configured for the correct number of stations, click OK.

If this is the first controller to be added to the Site, a window will ask whether this is the Master Controller (if it is an ACC), or if it is the Site Interface controller (if conventional SI).

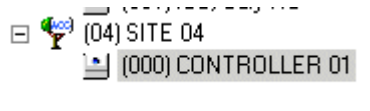


## Setting Up ACC Controllers

On ACC Sites, the Master Controller is normally the controller with the communications link back to the central computer.

On conventional sites, the Site Interface controller is the controller connected directly to the SI controller.

After making the selection, the controller will appear in the tree-view on the left under the new site.

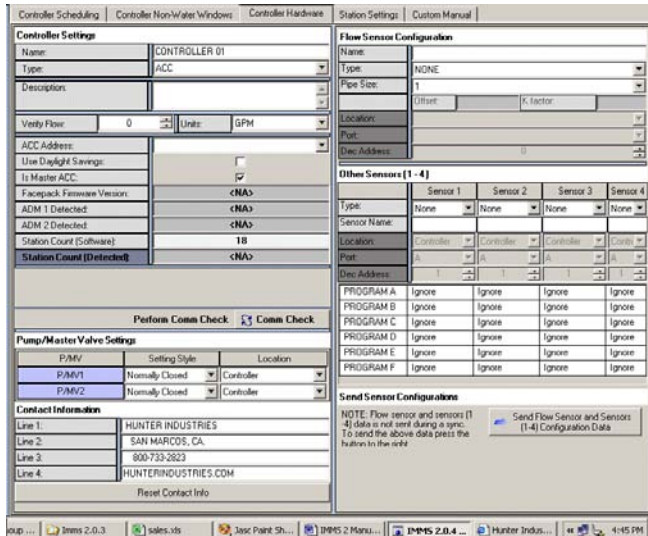


Click on the controller icon, and its scheduling screen will appear.

Program	A	B	C	D	E	F		
Program Name	PROGRAM A	PROGRAM B	PROGRAM C	PROGRAM D	PROGRAM E	PROGRAM F		
Days To Water	0-1-1-1-1-1-1	0-1-1-1-1-1-1	0-1-1-1-1-1-1	0-1-1-1-1-1-1	0-1-1-1-1-1-1	0-1-1-1-1-1-1		
Next Water Date	3/5/2007	3/5/2007	3/5/2007	3/5/2007	3/5/2007	3/5/2007		
Start Times								
Start Time 1	OFF	OFF	OFF	OFF	OFF	OFF		
Actual Start	OFF	OFF	OFF	OFF	OFF	OFF		
End Time	OFF	OFF	OFF	OFF	OFF	OFF		
Season Adjust	100 G	100 G	100 G	100 G	100 G	100 G		
Start Mode	Overlap	Overlap	Overlap	Overlap	Overlap	Overlap		
Station Delay	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00		
Station Name	Program A	Program B	Program C	Program D	Program E	Program F	Cycle	Soak
(1) STATION 01	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(2) STATION 02	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(3) STATION 03	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(4) STATION 04	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(5) STATION 05	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(6) STATION 06	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(7) STATION 07	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(8) STATION 08	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(9) STATION 09	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
Per Start Times	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00		
Fix Program	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00		

Click on the Controller Hardware tab to see the controller's general settings. This screen is only used for setup or major changes to the controller's configuration.





## Controller Hardware Tab (ACC)

The controller hardware tab allows key information about the controller's configuration to be set up.

The Controller Settings section of the hardware tab contains general information about the controller.

Controller Settings	
Name:	1766Grizzle&Hunter
Type:	ACC
Description:	
Verify Flow:	0 Units: GPM
ACC Address:	50
Use Daylight Savings:	<input type="checkbox"/>
Facepack Version:	5.00.023
ADM:	NOT DETECTED
Station Count (Software):	12 <span>Comm Check</span>
Station Count (Detected):	12

**Name:** You can name the controller. The name will represent the controller in most reports in the software, only. The controller name will not actually appear in the controller.

**Type:** Indicates whether controller is conventional ACC or decoder.

**Description:** Allows text notes of any kind.

**Verify Flow:** This is for theoretical flow setting only and does not refer to flow metering capability. It is used for the software to check whether station scheduling will cause the max flow per controller to be exceeded. It has no effect on actual controller operations.

**Units:** Sets Gallons per Minute or Gallons per Hour. Drip and other low volume sprinklers are often set in gallons per hour.

**ACC Address:** This setting is vital to communications, and must match the address set in the controller's com module. The setting cannot be sent to the controller, and the com module must be physically set to the same address in the field. Allowable range is from 1 to 999. Controllers do not have to be addressed in any specific order, but each controller must have a unique address.

**Use Daylight Savings:** Leave unchecked. Recent changes to US Daylight Saving Time changes have made this function obsolete, and they are generally not correct for international changes either. Most Windows operating systems will update Daylight Saving changes automatically, and the updated time will be included in the next Sync to the field. Most controller hardware Daylight Saving settings are no longer useful, because of these governmental changes.

**Is Master ACC:** The Master controller is the first controller on a Site, meaning it has the communications point of connection back to the central computer. Other controllers sharing the connection on the Site are known as "Client" controllers and their checkbox is left blank.

**Facepack Firmware version:** This field cannot be set, but will be filled in automatically when communications are established. It displays the version of firmware in the controller's facepack.

**ADM Detected:** Displays whether a decoder output module was detected in the controller.

Station count [Software]: Displays the total number of installed stations set in the IMMS software.

Station count [Detected]: Displays number of stations reported by the controller. This is filled in after communicating with the controller.

There is a Comm Check button built into the Controller Settings section. If communications are set up, clicking this button will force a comm check, which will fill in the information fields with version numbers and station size.

For example, the controller below has filled in the Facepack version number, and shown a different station size than the software had, after the comm check.

Click "Count" button to change the software to match what was found in the controller. If you want to change the controller to match the software, you will need to visit the controller and physically add (or troubleshoot) the 6-station output modules.

Controller Settings	
Name:	1766Grizzle&Hunter
Type:	ACC
Description:	
Verify Flow:	0
Units:	GPM
ACC Address:	50
Use Daylight Savings:	<input type="checkbox"/>
Facepack Version:	5.00.023
ADM:	NOT DETECTED
Station Count (Software):	24 <b>Comm Check</b>
Station Count (Detected):	12 <input checked="" type="checkbox"/> <b>Count</b>

The Pump/Master Valve and Contact Info section sets other characteristics of the controller that are not normally sent in a Synchronization.

Pump/Master Valve Settings		
P/MV	Setting Style	Location
P/MV1	Normally Closed	Controller
P/MV2	Normally Closed	Controller

Contact Information		Reset Contact Info
Line 1:	Hunter Industries	
Line 2:	San Marcos, CA	
Line 3:	1-760-591-7383	
Line 4:	HunterIndustries.com	

<input type="checkbox"/> ET Sensor Installed	Source: Not Assigned
Rain Max:	0.25
Temp:	35
Wind:	10

ET Sensor Usage (Yes/No) | ET Sensor Configuration | **ET<sub>0</sub>**

There are 2 Pump/Master Valve outputs per controller. They can be Normally Closed, or “Normally On”. Most master valves are normally closed.

*In the ACC controller, Normally On means the output will be hot (live 24VAC) until a station calling for the output is activated, when the output will turn OFF. Think of this as Normally ON.*

The P/MV Location info is only used in decoder controllers. Each P/MV can be connected to the Controller (terminals on the ACC Master Module), or can be assigned to a decoder in the two-wire paths to the field. If you are going to use a decoder module to operate a Pump/Master Valve, the location should be changed to Decoder.

P/MV1 and P/MV2 can be set to Controller or Decoder independently and it is possible to have one of each.

The ET Settings are only used if the optional IMMS-ET software has been added. Consult the IMMS-ET documentation for information on these functions.

### Contact Info

You can set the ACC contact information, which will appear in the controller at the Set Station & Program Names dial position. The default info is Hunter Industries contact information, but this screen is completely programmable.

Type in the information exactly as you wish it to appear in the controller display.

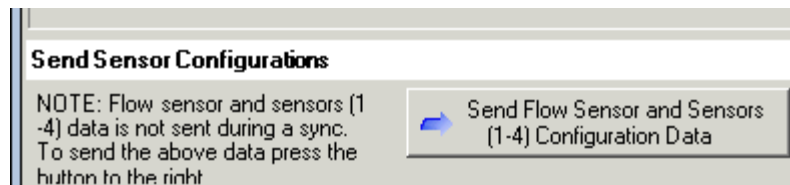
The Reset Contact Info will set the display back to the Hunter Industries contact info.

The Contact and P/MV info are sent to the controller whenever a full Sync is sent to the field.

### Sensor Info

The right side of the Controller Hardware tab contains the sensor setup information. This is very important if you plan to use either Flow or "Clik" type sensors. If there are no sensors, you can leave it blank.

If you do configure sensors, notice that this information must also be sent separately with the Send Sensor Configurations button.

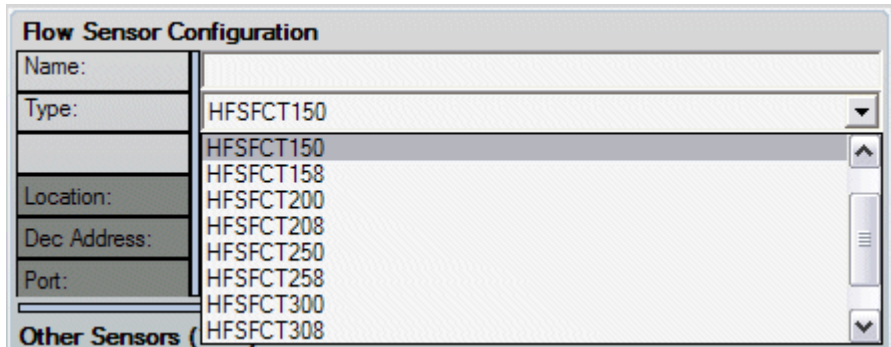


The Flow Sensor Configuration tells the controller how to interpret flow input.

Flow Sensor Configuration	
Name:	
Type:	HFSFCT200
Pipe Size:	2
	Offset:      K factor:
Location:	Controller
Port:	A
Dec Address:	0

Name is optional.

Type is mandatory. The Type setting tells the controller how many liters or gallons are represented by each pulse from the flow meter. If it is not correct, the flow readings will not be accurate.



The image shows a software dialog box titled "Flow Sensor Configuration". It contains several fields and a list:

- Name:** An empty text input field.
- Type:** A dropdown menu currently showing "HFSFCT150".
- Location:** A text input field.
- Dec Address:** A text input field.
- Port:** A text input field.
- Other Sensors (**: A list box containing the following items: HFSFCT150, HFSFCT158, HFSFCT200, HFSFCT208, HFSFCT250, HFSFCT258, HFSFCT300, and HFSFCT308.

Click the drop-down arrow and select from the list. All Hunter's HFS FCT fitting sizes are listed, just as they are in the controller. The last choice is Other, meaning compatible flow sensors from other manufacturer's (such as Data Industrial, Model IR220B).

"Other" enables the Offset and K-factor fields. These values can be found in the flow sensor suppliers' documentation for each diameter of pipe. They are not used with the Hunter selections.

Pipe Size is not used for controller settings but may be entered for record keeping purposes.

Location is only used in decoder controllers. If an ICD-SEN Sensor Decoder is present in the system, the Flow Meter can be connected to the sensor decoder. If this is desired, change the Location setting to Decoder.

Dec Address is the specific address of the sensor decoder to which the flow meter has been connected.

"Other Sensors [1-4]" configures the 4 Clik sensor inputs in each ACC Controller, and their responses by Program.

Other Sensors (1 - 4)				
	Sensor 1	Sensor 2	Sensor 3	Sensor 4
Type:	Rain Klik ▾	NONE ▾	NONE ▾	NONE ▾
Sensor Name:	NONE			
Location:	Rain Klik	Controller	Controller	Controller
Dec Address:	Freeze Klik			
Port:	Wind Klik			
	MWS			
	Flow Klik			
Program	Sensor 1	Sensor 2	Sensor 3	Sensor 4
(A) PROGRA..	Suspend	Ignore	Ignore	Ignore
(B) PROGRA..	Suspend	Ignore	Ignore	Ignore
(C) PROGRA..	Suspend	Ignore	Ignore	Ignore
(D) PROGRA..	Ignore	Ignore	Ignore	Ignore
(E) PROGRA..	Ignore	Ignore	Ignore	Ignore
(F) PROGRAM..	Ignore	Ignore	Ignore	Ignore

Send Sensor Configurations

Flow Sensor Data is not sent during a sync. Press this button to send its configuration now

**Send All Sensor Data**

Type: Choose your Klik type sensor from the drop-down menu.

Name: The sensors may be named, and the name will appear in the software when the sensor's status is reported. The name is not used in the controller.

The matrix below the Names field allows response by program to each sensor. Programs are listed down the left side of the matrix; each sensor is listed across the top.

Each setting can have 3 possible settings.

Other Sensors (1 - 4)				
	Sensor 1	Sensor 2	Sensor 3	Sensor 4
Type:	Rain Clik ▾	Freeze Cli ▾	Wind Clik ▾	NONE ▾
Sensor Name:				
Location:	Controller	Controller	Controller	Controller
Dec Address:	▾	▾	▾	▾
Port:	▾	▾	▾	▾
Program	Sensor 1	Sensor 2	Sensor 3	Sensor 4
(A) PROGRA...	Suspend	Ignore ▾	Ignore	Ignore
(B) PROGRA...	Suspend	Ignore	Ignore	Ignore
(C) PROGRA...	Suspend	Suspend Pause	Ignore	Ignore
(D) PROGRA...	Ignore	Ignore	Ignore	Ignore
(E) PROGRA...	Ignore	Ignore	Ignore	Ignore
(F) PROGRAM...	Ignore	Ignore	Ignore	Ignore

Ignore means the selected program will not be affected by the sensor.

Pause means the program will stop if the sensor is activated, and the program timer will also stop. If the sensor is restored, the program will resume where it left off. No irrigation will be missed, but the program will run longer (later).

Suspend means the program will stop if the sensor is activated, but the program timer will continue running. If the sensor is restored, the program will resume where it should be in real time. The irrigation that would have occurred during the shutdown will be missed, but the program will finish at the originally scheduled time. The missed irrigation will be visible in reports.

When a program has a response (Pause or Suspend) rather than "Ignore" selected for any sensor, then all of its responses must be that selection. A program cannot be in Pause *and* Suspend at the same time. Therefore, a program can Ignore any or all of the sensors, but once Pause or Suspend is chosen for one of the sensors, all actual responses must be the same.

IMMS will change all sensor responses in a program to be the same, automatically. Sensors set to Ignore will be left on Ignore.

The Pause and Suspend selections do not apply to the Flow Sensor. Flow responses are by station, as explained in the Station Settings section.

When the Flow and Sensor information is correct, click the Send Sensor Configurations button. This will initiate communications to the controller and download the configuration.

## Adding Traditional Controllers (ICC, Pro-C, SRC using SI/CI interfaces)

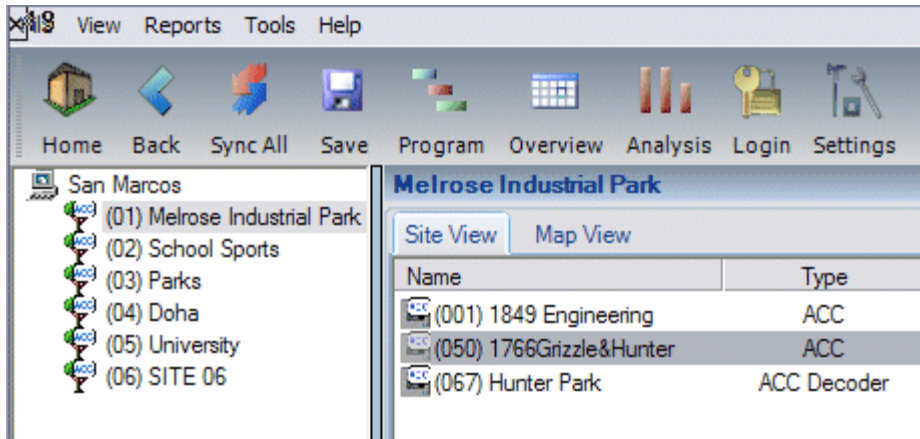
If you selected a “traditional” site and need to add one of these controllers, a dialog will ask if the new controller is the “Site Interface controller”. This is the controller attached to the SI at the communications point of connection to the site.

It is not necessary to have a controller at the SI location, although it is possible (and frequently done). It is important to tell the software whether the new controller is attached to the SI, because if you answer no, the software will create a CI location for the new controller.

SI/CI sites are addressed automatically by the SI, unlike ACC controllers (which are addressed individually at the Com modules). Consult SI manual for this procedure.

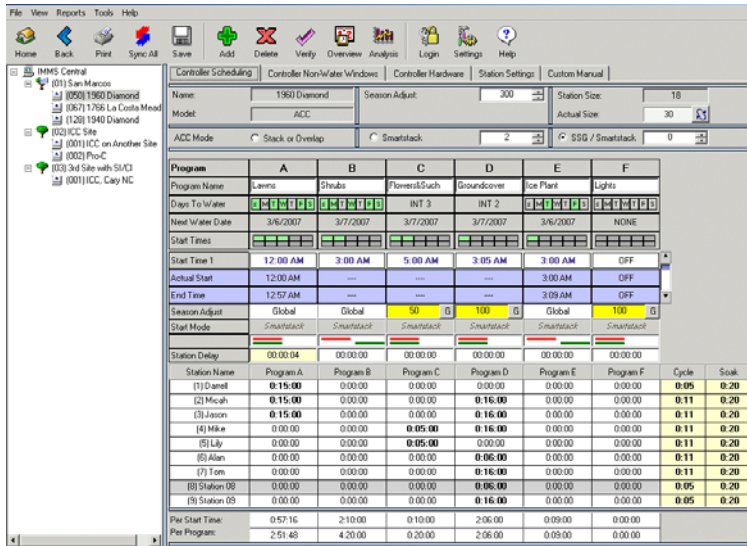
## ACC Operations

Start from Home, and click an ACC Site in the tree-view on the left. The controllers you have created on the Site will appear in the right screen.



Double-click an individual ACC controller to open its information. Normally the software opens on the Scheduling tab.





ACC controllers have several tabs across the top of the screen. The primary irrigation information is set on the Scheduling tab.

### Station Settings Tab

Many important functions can also be set on the Station Settings tab. Click the Station Settings tab to view these selections.

Controller Scheduling		Controller Non-Water Windows		Controller Hardware		Station Settings		Custom Manual	
<b>Controller Stations</b>								Station Size: 99	
#	Name	MV1	MV2	Cycle	Soak	Flow	Flow Designation	Flow Units	
1	NW Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	1	Use Flow	GPM	
2	SW Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
3	NE Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
4	SE Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
5	W Walks 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
6	W Walks 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
7	N Walks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	9	Use Flow	GPM	
8	Shrub	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Use Flow	GPM	
9	Station 09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Use Flow	GPM	
10	Station 10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Not Monitored	GPM	
11	Station 11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Use Flow	GPM	
12	Station 12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Not Monitored	GPM	
13	Station 13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Use Flow	GPM	
14	Station 14	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	Use Flow	GPM	
15	Station 15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	9	Not Learned	GPM	
16	Station 16	<input type="checkbox"/>	<input type="checkbox"/>	0	0	9	Not Learned	GPM	
Flow Column = Locked		Flow values will not be sent during a controller sync							
<b>SSGs</b>				<b>Available Stations</b>					
Name	Cycle	Soak	Flow	Name	Station	Station			
Turf Group	0	0	3	NW Lawn	Station 14	Station 27			
SSG 2	0	0	3	SW Lawn	Station 15	Station 28			
				NE Lawn	Station 16	Station 29			
				SE Lawn	Station 17	Station 30			

Station Settings is the easiest place to name stations, set Pump/Master Valve info, and Cycle and Soak settings for each station.

*Name stations:*

Click and drag the mouse to highlight the “Station 01” or any other number. Type replacement name up to 12 characters and press Enter. These names will appear in the controller, and are sent with a full Sync.

*P/MV Pump Master Valve settings:*

Click to check MV1 and/or MV2 to set the Pump/Master Valve combination for each station. Once this is downloaded, the correct combination of P/MV settings will activate whenever the station is started.

*Shortcuts: Use up and down arrow to move down station list. Use space bar to toggle MV boxes checked/unchecked.*

*Cycle and Soak:*

Set Cycle and Soak times as desired. The Cycle time is a maximum (per cycle) and the Soak time is a minimum. Cycle and Soak allow you to enter any run time required for irrigation, and the controller will automatically divide that time into maximum allowable cycles, and then wait at least the minimum soak time before applying another cycle. This is an excellent tool to conserve water and prevent runoff.

*Shortcut: Click a cell in the Cycle or Soak column, then hold down Shift and click another cell to select the entire range of stations between the two cells. You can also use Control (CTRL) to select multiple cells which are not consecutive.*

*Right click in one of the cells and change the setting. The new setting will be applied to all selected cells.*

## **Flow Settings**

(Station Settings tab)

The number in the Flow column and the setting in the Flow Designation are highly important and affect the station-level flow alarm protection at the controller. For this reason, they are padlocked to prevent accidental changes that might disable, or change, flow monitoring.

The Flow value is the amount (in liters or gallons, depending on your units selection) that each station normally flows per minute.

The Flow Designation field determines whether they are sent to the field, or used at all.

The ACC is a flow learning controller. If it has a flow meter installed, and has been placed in Learn mode, it will build its own list of typical flow rates by station.

To retrieve actual learned flow from the ACC controller and automatically fill in this column, follow this procedure.

If the controller is new, completely program the ACC with all irrigation data, *except* flow.

Send (Sync) to the controller.

Visit the controller location and initiate the Learn mode. ACC will only learn flow for stations with run times!

Learn mode cannot be initiated from IMMS. This can only be started from the controller facepack.

After learning, return to the central software and Retrieve the controller (see Retrieve Mode for an explanation in detail).

Click the Replace Controller button in the software on the retrieve screens, to store the learned flows in the software.

Once flow data is stored in the table, the padlock will lock again automatically when the screen is exited. This prevents accidental changes from being sent to the controller with a full Sync.

If you wish to edit flows, or change the Limit and Delay settings for flow alarms, make the changes in the software.

First, click the padlock to unlock the flow portion of the table.

Controller Stations							Station Size:
#	Name	MV1	MV2	Cycle	Soak	Flow	Flow Designation
1	NW Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 1	Use Flow
2	SW Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
3	NE Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
4	SE Lawn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
5	W Walks 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
6	W Walks 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
7	N Walks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
8	Shrub	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	➡ 9	Use Flow
9	Station 09	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	➡ 9	Use Flow
10	Station 10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	➡ Not Monitored
11	Station 11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	➡ 9	Use Flow
12	Station 12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	9	➡ Not Monitored
13	Station 13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8	30	➡ 9	Use Flow
14	Station 14	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	30	➡ 9	Use Flow
15	Station 15	<input type="checkbox"/>	<input type="checkbox"/>	0	0	9	➡ Not Learned
16	Station 16	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	➡ Not Learned

Flow Column = Unlocked      Flow value that will be sent to the controller during a sync. Value i summaries.

Use the Shift or Control multi-select functions if necessary, to change any edited stations to “Use Flow”.

Click in one of the highlighted spaces and change the flow amount, the limit, or the delay (see next Flow Limit % and Alarm Delay section).

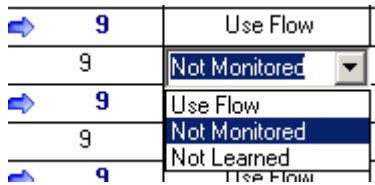
Use Flow	GPM	124
Use Flow	GPM	125

All highlighted fields will update when you press Enter.

Synchronize with the controller to download the new settings.

### Flow: Not Learned and Not Monitored

The Flow Designation column has 3 possible settings.



➡	9	Use Flow
	9	Not Monitored
➡	9	Use Flow
	9	Not Monitored
➡	9	Not Learned

**Use Flow:** Will send the flow on Sync and this will be the flow setting in the controller for flow monitoring purposes.

**Not Monitored:** The station will be ignored for flow monitoring. Station will still run normally but no flow will be expected by the controller.

**Not Learned:** Avoid setting this for any station, when flow monitoring is desired. Not Learned is the setting for all stations, before flow has been learned. However, after Learning, all stations should be set to Use Flow (with flow values) or Not Monitored (for non-irrigation devices). If a few stations still appear as Not Learned after Learning was initiated from the controller, it means that the controller was unable to learn a flow for the station.

Possible causes would be:

- 1) no run time for the station (would be ignored in learning process)
- 2) unstable flow (controller could not get a stable reading during 5 minute flow learning run time).

Running a station in Not Learned status will defeat flow monitoring! If other learned stations are running at the same time as any Not Learned station, they will not be monitored at all for alarm purposes.

### **Flow Limit % and Alarm Delay**

#### *Flow Limit*

The Flow Limit percentage determines when a high flow condition is treated as an alarm. It also indirectly determines when a low flow, or Underflow, condition is treated as an alarm.

The learned flow = 100%. The ACC controller will default to a Flow Limit % of 115%, meaning any flow 15% or more over the learned amount will cause a flow alarm. This percentage can be edited for field conditions. The allowable range is 110% to 300%.

Flow fluctuates significantly in some systems, and setting the Flow Limit percentage higher will reduce false alarms.

The minimum flow, or Underflow percentage, is automatically set to twice the percentage of the Overflow setting, or 1, whichever is greater.

Example: The Learned Flow is 10.

If the Flow Limit is set to 120%, the Overflow limit will be 12, and the Underflow limit will automatically be 6.

$$10 \times 120\% = 12$$

$$10 \times 60\% = 6 \text{ (20\% over, 40\% under).}$$

To change the flow limit, unlock the flow settings, right-click in the limit cell, and type or change the value with the spin buttons (up and down arrows).

### *Alarm Delay*

The Alarm Delay specifies a period after the station activates, during which flow will be ignored for alarm purposes. This is to prevent false alarms when stations first activate, since flow is turbulent and often mixed with air, causing artificially high flow readings. The default delay in the controller is 1 minute, but it may be adjusted from 15 seconds to 9 minutes, 59 seconds to prevent false alarms.

To change the delay, unlock the flow settings, right-click in the delay cell, and type or change the value with the spin buttons (up and down arrows).

## **SSG (Simultaneous Station Group) Management**

SSGs are groups of stations which start and run together, simultaneously. You can use up to 20 SSGs per controller, and you may combine any 2, 3, or 4 stations into each SSG.

Once an SSG has been created, it is programmed as a single unit and the SSG can be included in automatic programs. When an SSG starts, all of its member stations turn on and run for the same run time.

SSGs are optional and you are never required to use them. However, they can be used to solve problems and speed programming, especially in large irrigation systems.

SSGs can run more stations in less time, if you have enough flow and pressure to support the demands of simultaneous stations.

SSGs reduce the number of items that need to be included in sequential programs. For example, 40 stations could be combined into 10 SSGs (of 4 stations each) and only 10 items would need run time entries, instead of 40.

SSGs can be used to automatically control which items are permitted to run simultaneously in a large system. By strategically selecting which stations are included in each group, it is possible to disperse flow

over a large pipe network, with the effect of reducing velocities in any single pipe. This requires detailed knowledge of the hydraulic system to accomplish.

SSGs will automatically receive the flow characteristics of their member stations. If two stations with learned flow of 10 each are combined into an SSG, the SSG will have a flow of 20.

A station may only be assigned to one SSG.

There are always 20 “slots” per ACC controller for available SSGs. They do not appear in the station list on the Station Settings tab until stations have been assigned to them. Once an SSG has stations assigned, it will appear at the bottom of the station list, after the individual stations.

SSGs may be named for convenient reference. When they appear in the station list, they can be assigned names (up to 12 characters long, including spaces). If the names are sent to the controller, the SSG name will also appear in the controller display.

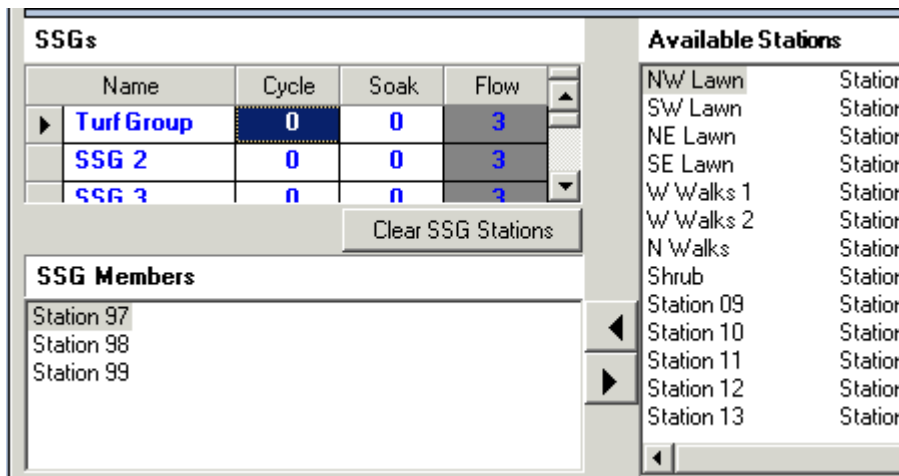
SSGs will ONLY run when the controller has been placed into SSG/SmartStack mode. In any other mode, the SSG station members are individually available, and the SSGs are not used.

SSG/SmartStack mode enables the SSGs to run, and also permits up to two other Programs which do NOT contain SSGs to run at the same time.

### Create/Edit SSGs

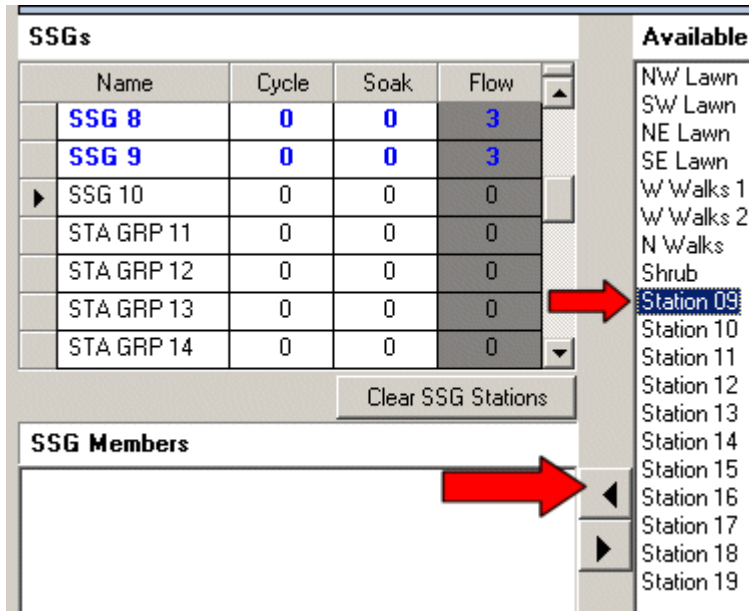
There are already 20 potential SSGs listed in the lower section of the Station Settings tab.

Click on the name of any SSG, and any stations in the SSG will appear in the SSG Members list.



To add stations to an SSG, click the station name in the Available Stations window to highlight it. You can select up to 4 at once by holding down the Control (CTRL) key while clicking each of them.

Click the left arrow button pointing to the SSG Members window, and the highlighted stations will be assigned to the SSG.



You cannot enter more than 4 station members to an SSG. A warning will appear if the total number will exceed 4 stations.

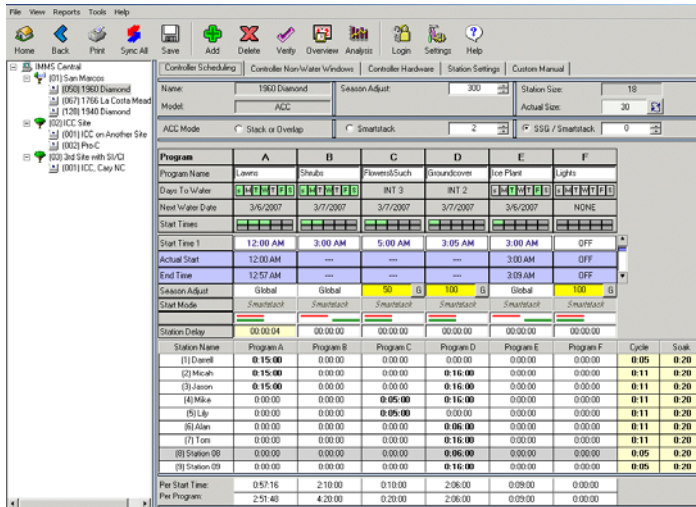
To remove a station or stations from an SSG, click the station names in the SSG Members window to highlight them, and click the right arrow button (pointing back to the Available Stations window). The stations will be removed and placed back in the Available Stations list.

## Scheduling Tab

The Scheduling Tab is the primary programming tool for the ACC controller's irrigations functions.

The Scheduling screen is a spreadsheet view of most major ACC features. Each controller in a system has its own Scheduling tab. The settings on the Scheduling tab merely reflect the features of an ACC controller.





## Key Elements of the Scheduling Screen

Season Adjust (global, meaning the whole controller)

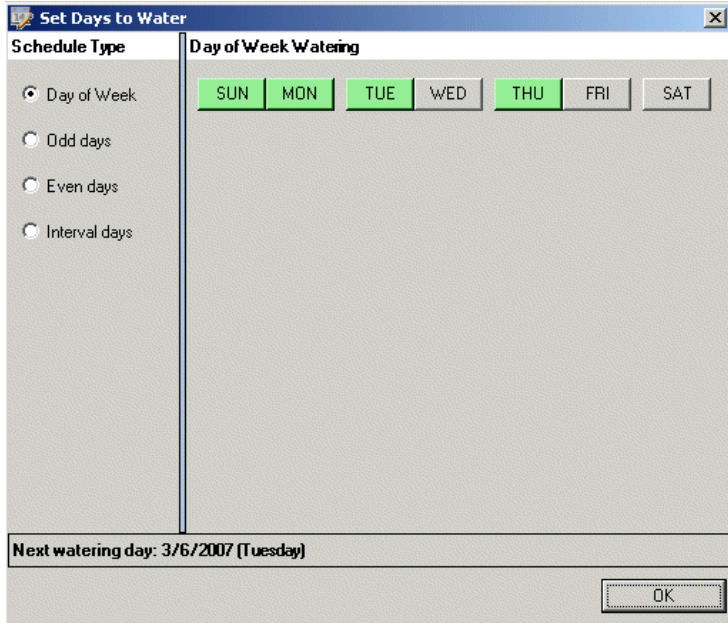
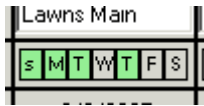
ACC Mode sets Stack and Overlap operations (determines which or how many programs are allowed to run at once). Double click the double-line icon to change between Overlap and stacked operation.

Start Mode	Overlap	Stack
Station Delay	00:00:00	00:00:00

Program Name identifies the lettered Programs.

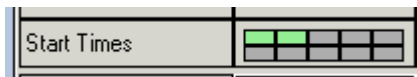
Program	A	B
Program Name	Lawns Main	Lawns Walks
Days To Water		

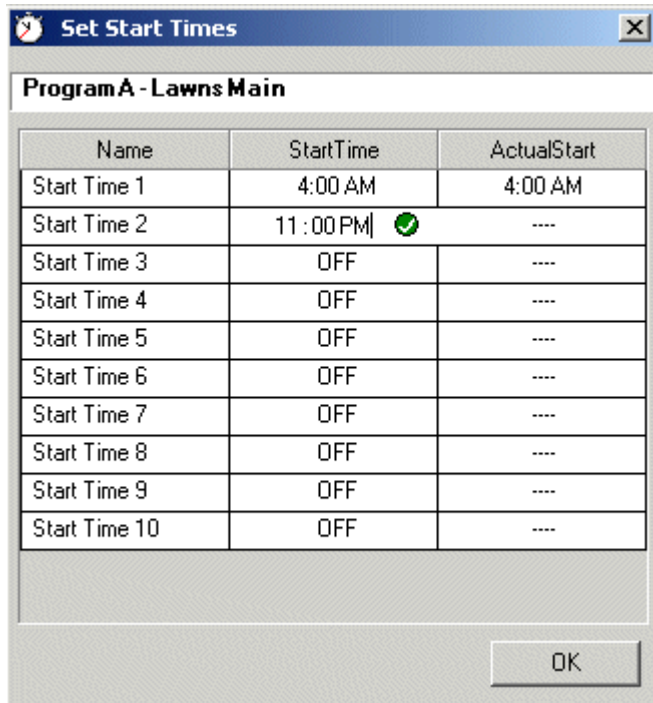
Days to Water selects the days of week, or the day or date pattern, on which watering will occur. Double-click in this cell to activate the Set Days to Water window.



Next Water Date is calculated based on the Days to Water settings. It is informational and cannot be changed directly (change the Days to Water instead).

Start Times: The Start Time indicator lights show how many start times are in use. Each Program has 10 possible start times, and the green lights indicate how many have been given an actual time (instead of "Off"). Click directly in the light display to open the Set Start Times window.





Right click in any OFF cell to add a Start Time.

**Start Time 1:** Shows the first start time. To the right of this row there is a scroll bar that allows you to scroll up and down through all start times. Each start time can be changed in this field directly, or with the Set Start Times window.

**Actual Start:** This shows the effects of any Stacking delays on the Program. If the Program was set to start at a certain time, but has been forced to start at a different time because of stacking or other rules, the Actual start will be different than the Start Time. It cannot be changed directly (change the stack/overlap rules instead).

**End Time** is calculated based on the Start Time and the total length of the program, including all Start Times. It cannot be changed directly (change the start times, numbers of starts, or station run times instead).

**Season Adjust (Program level):** sets the percentage adjustment of run times at the Program level. Normal setting is 100% and each Program can be adjusted in 1% increments. If the “G” button is clicked, the percentage changes to Global and the Program will follow the percentage set at the top-level Season Adjust instead.

Program	A	B
Program Name	Lawns Main	Lawns Walks
Days To Water	S M T W T F S	S M T W T F S
Next Water Date	3/6/2007	3/6/2007
Start Times		
Start Time 1	4:00 AM	4:00 AM
Actual Start	4:00 AM	4:00 AM
End Time	5:44 AM	5:25 AM
Season Adjust	90 G	100 G
Start Mode	Overlap	Stack

Start Mode: shows the setting by Program for the ACC Mode choices at the top of the screen.

Overlap Bars: The field under Start Mode shows 2 bars which are either parallel, or staggered, depending on whether the station is set to Stack or Overlap. Double-click the bars to change them from Stacking to Overlapping.

Station Delay: This is an optional delay, from 10 seconds to 6 hours, inserted between each station in a program, most commonly for hydraulic reasons. Each Program can have its own delay which occurs between all stations in the program.

Run Times. The length of time each station will run, from 1 second to 6 hours max. Click in the field to adjust hours, minutes, or seconds. Stations may also be named in the left hand column by highlighting and replacing text.

Run Times can be adjusted in groups. Hold down the Shift key to select a range of stations, or the Control key to select multiple stations that are not consecutive. Right click in the highlighted stations, and change the bottom station to the new value. All highlighted stations will change at once.

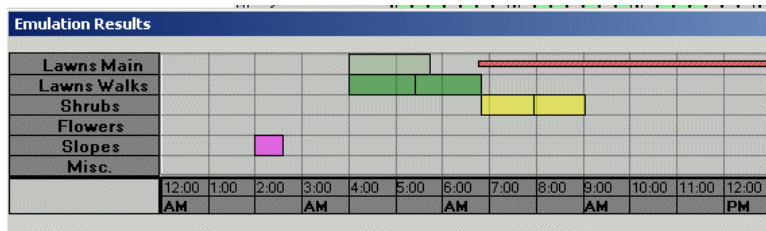
Per Start Time and Per Program Summaries: Calculates total length of program by start and by program.

Cycle and Soak settings allow stations to be adjusted individually for Cycle and Soak, and performs the same function as the cycle and soak columns on the Station Settings tab. They may be set or adjusted at either location. These settings may also be multi-selected with Shift or Control key functions.

Emulation Results: There is an Emulation Results button at the bottom of the Scheduling screen for each specific controller.



Click this button to view a Gant chart graph of each Programs duration in time. You cannot change the values in the chart directly. It is a report of the effects of your programs, graphed over the course of the irrigation day.



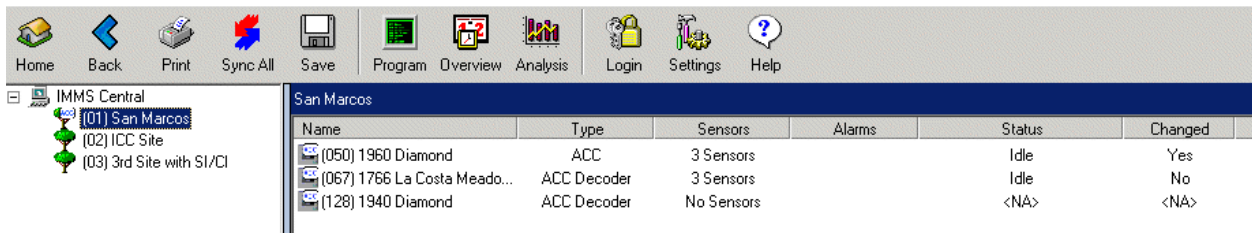
The colored horizontal bars show program start times and durations. The thin red line in the chart shows a non-water window setting for program A (Lawns Main).

## Home screen

The IMMS Home screen is the Overview of your entire system. It shows system status at a glance, and provides rapid navigation to key functions and critical information.

Click the Home button in the toolbar at the top to return to the Home page from any screen in IMMS.

The Home screen is mostly blank, until you create Sites and Controllers. Once they are created, and communications are established, information begins appearing in various columns with each new communications.



The Home screen is divided into 2 panes, left and right. These areas are where the sites and controllers will appear for control purposes, after you create them.

The left pane shows the major components in the IMMS in a tree-view. This represents the organization of the system.

The top or “system level” entity is called IMMS System, by default. It represents everything contained in the database. The name can be changed at the System Hardware tab if you wish. There is never more than one System.

## Sites

Under the System level are the various Sites, each represented by a tree icon. It is possible for a system to have only one Site, or there may be a maximum of 100 Sites.

A Site is a controller, or cluster of controllers, that share a single connection upstream to the computer. There can be from 1 to 100 controllers on a Site. The Site is not a piece of hardware, but a connection established by the computer. Every controller in an IMMS system must be on a Site, so that the computer knows how to connect to them.

Click on a Site in the left pane of the Home screen, and any controllers contained in the Site will be displayed on the right.

Next to the controllers are columns, showing vital information about the controllers. These columns are updated whenever communications are renewed with the Site.

**Name:** Controller name entered on Controller Hardware tab. Interactive: double-click to go the controller’s Scheduling tab, right-click for drop-down menu of communication functions for that controller.

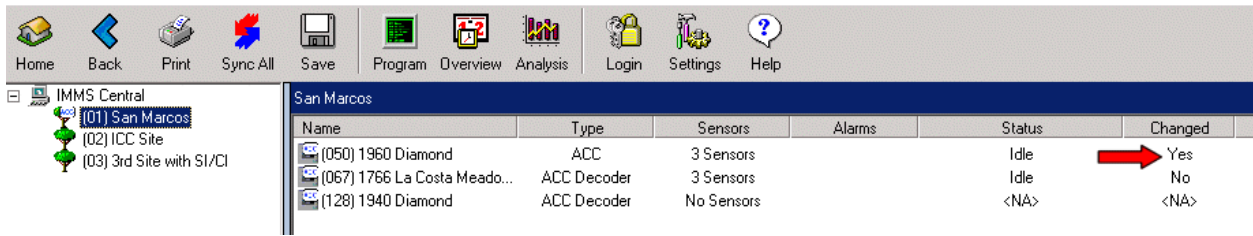
**Type:** Brand of Hunter controller. Also interactive like the Name column.

**Sensors:** Number of sensors configured for the controller, including “Clik” family sensors and Flow sensor, if applicable. Not interactive (based on Controller Hardware tab setup).

**Alarms:** Displays number of alarm events, if any. This display is interactive. Right-click to View or Clear the alarms.

**Status:** Shows operational status of controller, including whether it is irrigating, or set to Off. Not interactive, updated with each new communication to field.

**Changed:** Shows whether the controller has been changed in the field since the last communications with the computer. Not interactive.



## Home Screen, Status area

At the bottom of the right pane is a panel reserved for important information and functions. The range of functions is determined by the type of controller selected.

ACC controllers have full two-way communications, and will display more options in this area.

<b>Selected Object:</b> Site: San Marcos	Comm Type: Hardwire	COM Port (12), Baud Rate: 4800
Active Stations: <NA>	Last Comm: 3/6/2007 @ 6:01:45 PM	Get Status
Last Flow: <NA>	Last Retrieve: Tuesday, October 31, 2006 @ 10:31:31 AM	Enter Retrieve Mode

**Selected Object:** Displays the item (System, Site, or specific Controller) selected in Home screen. Click another object to change.

**Comm Type:** Shows how the computer connects to that location, including type of communications, Com port used on computer, and data rate.

**Controller Address:** Specific ID number for a controller.

**Active Stations:** Shows stations that were running at the time of the last communications. To update this information, select a Controller and click Get Status. This information ages very quickly, since it only shows status during the actual communications.

**Last Flow:** Actual flow at controller as of the last communications.

**Last Comm:** Last time the computer communicated with the selected device. This is useful to determine how old the data displayed might be.

**Last Retrieve:** Last time controller information was retrieved from the field.

**Get Status:** Immediately initiates communications with the selected controller and updates all status displays.

Enter Retrieve Mode: Enters special screens for retrieving programs from the controllers to the computer, for inspection or analysis. This is an ACC-only function and is not available with other controller selections.

Retrieve mode has several uses:

- Start a new IMMS 2 database from pre-programmed, standalone ACC controllers.
- Retrieve Flow setup information, after a controller has complete flow learning. Retrieve is not an efficient method to retrieve flow totals, however- these are retrieved automatically on synchronization.
- Retrieve edits made at the controller while in the field, and save them to the software.
- Examine any controller that shows “Yes” in the Changed column at the Home screen (field changes may be retrieved, inspected, approved and saved, or rejected and replaced with a sync from IMMS).

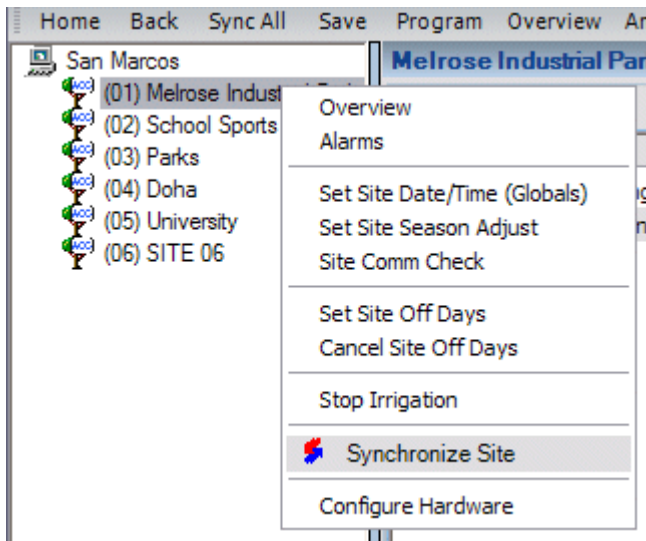
Retrieve mode is described in detail in its own section.

## Central Commands (Right-Click Menu)

When you right-click on a Site or Controller in the tree-view, a drop-down menu appears with many of the common commands and functions for quick and easy access.

### Site commands

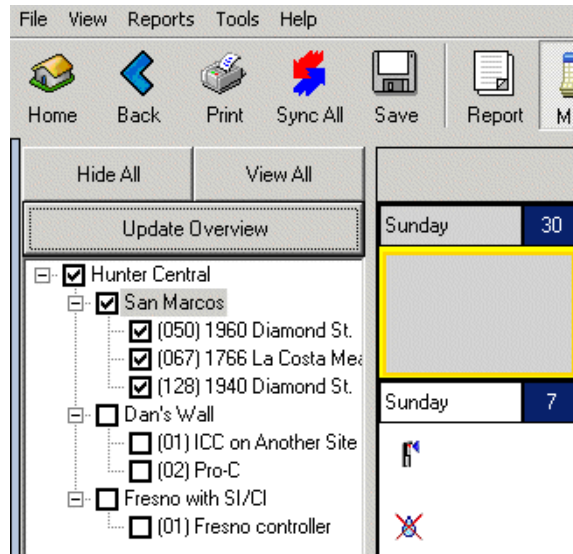
(right-click on Site in tree-view):



*Overview*

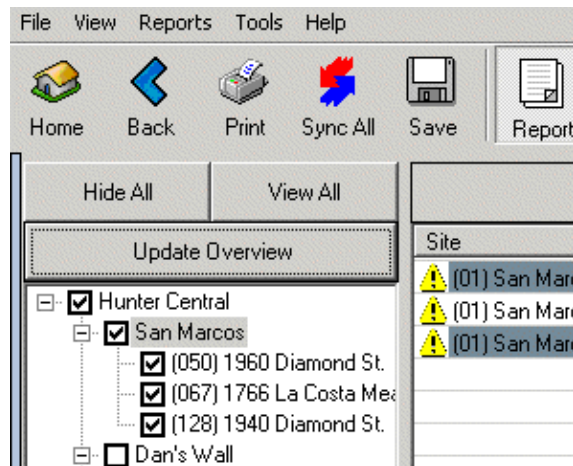


Goes to Overview calendar and prechecks all controllers on selected Site. Click Update Overview to view most current events for the Site.



### Alarms

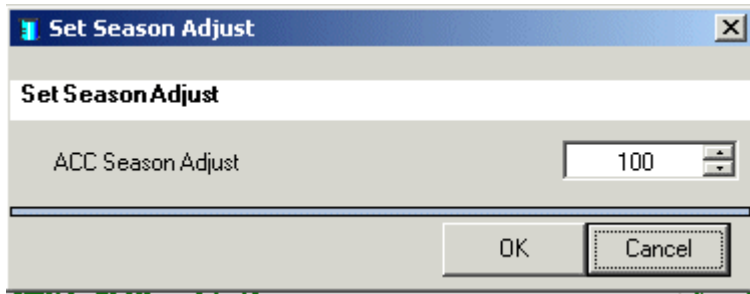
Goes to Alarm report and prechecks all controllers on selected Site. Click Update to see latest alarms.



### Set Site Season Adjust

This command will initiate communications to the Site (when the OK button is clicked). Allows instant Season Adjust percentage to be sent to all controllers on the Site.

Season Adjust adjusts all run times by the percentage entered. For example, a station with a base, or 100% run time, of 10 minutes, will run for 8 minutes if it is in a controller that has been sent an 80% Season Adjust command.



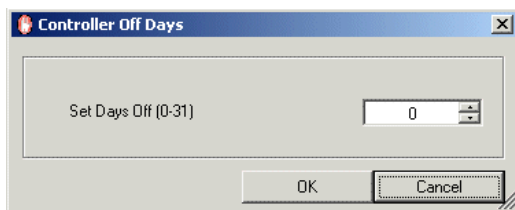
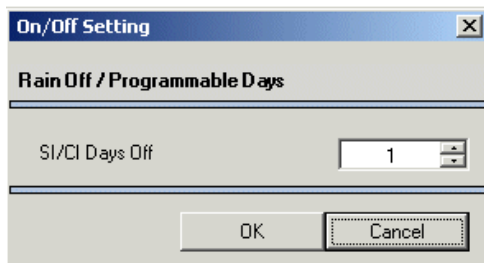
### *Site Comm Check*

Initiates communications to an ACC Site and exchanges data to verify communications. This is often used as a diagnostic procedure, because it starts a very short two-way communication that can test the link to the site.

SI/CI sites do not have the comm check feature.

### *Set Site Programmable Off Days*

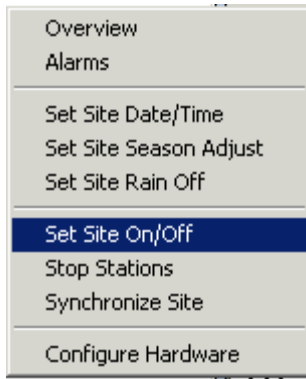
This appears for ACC sites. On SI/CI Sites, this is called Site Rain Off. Either command sets a timed number of days (1 to 31) for the Site to remain off, due to weather or other events. The controllers will not water until the number of days has elapsed.



### *Cancel Site Programmable Off Days*

This cancels a rain off command to the site and allows automatic irrigation to resume immediately.

On SI/CI sites, use the Set Site On/Off command instead.



### *Stop Irrigation/Stop Stations*

This is a form of shutdown command, with an important notice. This will stop all irrigation on either ACC or SI sites. However, it is not the same as an Off or Programmable Rain Off command. The controllers do not remain in an “Off” condition, and new watering scheduled to begin after this command is sent will begin on schedule. The Stop commands only stop stations that are already running!

### *Synchronize Site*

Downloads all Program information to controllers on the selected site (same as automatic Sync, but only for one site). This is useful in multi-site systems, when a large number of edits have been made for a single site, and longer communications (to sites which have not changed) are not desirable.

### *Configure Hardware*

Shortcut to the Hardware Configuration tab for the selected Site.

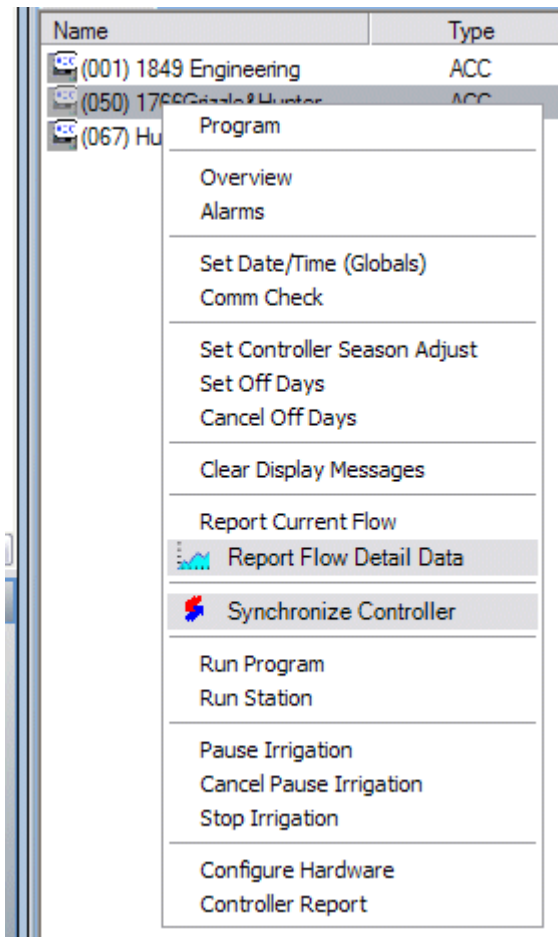
## **Controller commands**

(right-click on individual controller in tree-view or right pane):

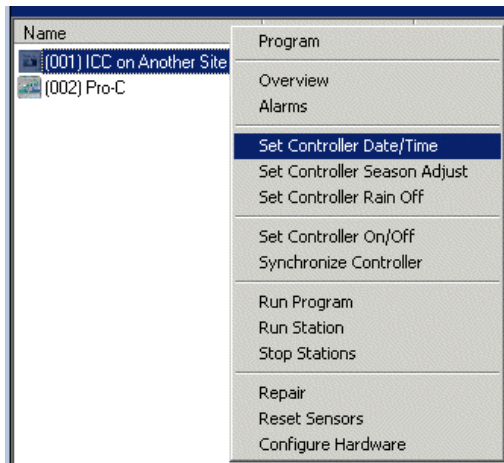
You can right-click on a specific controller to choose a more detailed list of commands available at that specific location.

These commands reflect the features of the controller selected. For this reason, the commands are different when right-clicking an ACC controller and right-clicking an ICC, Pro-C, or SRC controller.

ACC Controller Commands:



ICC, Pro-C, and SRC Controller Commands (SI/CI locations):



### *Program, Overview, and Alarms*

These commands are the same on all types of controllers. These commands are shortcuts to the respective screens with these names, for the selected controller (see Site commands for more information).

### *Set Globals (Date/Time)*

This command only appears for ACC controllers. It is used to set controller-level settings, most importantly the Date and Time in the controller.

It also sets Program Overlap options and other settings that are higher-than-program level. Set Globals is included in Automatic Syncs and the main purpose of having it as a separate command is to set ACC Date and Time.

The Set Globals command is also included in Synchronization commands. You are not required to send this information separately, but if you only want to re-sync the controller dates and times, it is a shorter communication than a full Sync.

### *Set Controller Date/Time*

This only appears on SI/CI linked controllers (non-ACC). It sets the controller times to the same time as the central computer. Be careful if calling to Sites outside of your time zone, since their times will be set to your computer's internal clock.

### *Comm Check*

This command is only available for ACC controllers. It will start a short communication with the selected controller.

On SI/CI controllers, the Set Controller Date/Time is sometimes used for this purpose.

### *Set Controller Season Adjust*

Sets the Season Adjust for an individually selected controller. This only sets the “global” or controller-level Season Adjust on ACC controllers. The ACC also has Program level Season Adjust settings, which must be set individually on the Scheduling tab.

Be sure to Save after sending a Season Adjust setting to a controller, or automatic Synchronization may undo the adjustment.

*Set Controller Programmable Days Off/Rain Off*

This appears for ACC sites. On SI/CI Sites, this is called Set Controller Rain Off. Either command sets a timed number of days (1 to 31) for the controller to remain off, due to weather or other events. The controller will not water until the number of days has elapsed.

*Cancel Programmable Days Off*

Cancels the timed shutdown, and restores ACC Controller to normal automatic operations. SI/CI controllers have a Set Controller On/Off command for the same purpose. Set the controller On to restore automatic operations on an SI/CI site. This will cancel a Rain Off setting.

*Report Current Flow*

(ACC only)

This will call the selected controller and retrieve the flow totals, if a flow meter is installed and configured at that controller. It is virtually the same as viewing the Flow Totals at the ACC controllers Data History dial position. It will show Current Flow, plus Controller totals for day, week, month, and year-to-date.

25 AM	Retrieving Flow Totals	
25 AM	Get Flow Totals succeeded (Controller Level)	
25 AM	FLOW TOTALS	
25 AM	SYSTEM UNITS =GPM	
25 AM	TODAY = 7,880.00	YESTERDAY = 10,580.10
25 AM	WEEK-TO-DATE = 35,220.00	LAST WEEK = 119,772.00
25 AM	MONTH-TO-DATE = 257,735.00	LAST MONTH = 473,262.00
25 AM	YEAR-TO-DATE = 1,146,132.00	LAST YEAR = 1,857,318.00
26 AM	ACTUAL FLOW = 12.00	
26 AM	Retrieving Status succeeded	

*Report Flow Detail Data*

(ACC only)

This will create a detailed flow data graph, which can show flow levels throughout a 24 hour period at specified intervals.

*Synchronize Controller*

This will download all program information to the selected controller, immediately. This will completely replace the program scheduling information in the controller with the latest changes in the IMMS software.

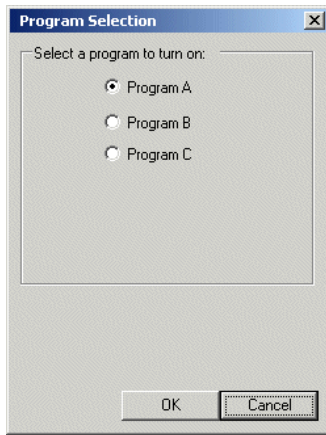
If you have made changes without saving, those changes will also be sent to the controller. It is best to save any changes on the computer, before sending them to the field, to insure that the controllers and the central computer remain synchronized.

### *Run Program/Run Station*

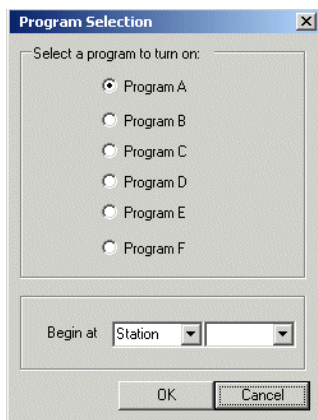
These commands allow you to instantly start a specified program or station at the selected controller.

A window allows you to select the Program or Station you want to start. The Station window also allows you to specify a run time for the station. When the command is sent, the program or station will begin immediately.

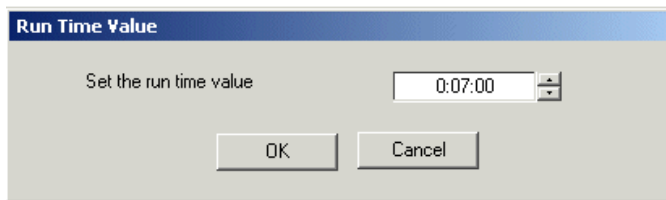
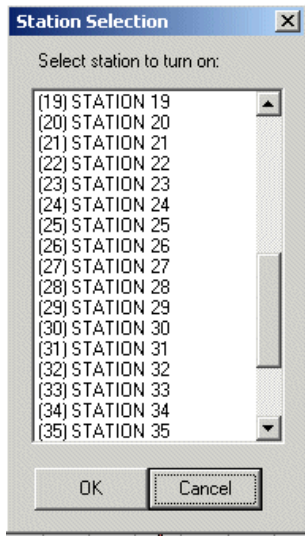
On SI/CI locations, you can specify whether to start programs A, B, or C.



The ACC controller has programs A through F, and also allows you to specify that the program start on a specific station (instead of at the beginning).



The Run Stations command allows you to select a station, and specify a run time.



When you click OK, the command is sent. If successful, the program or station will start and run immediately.

### *Pause Irrigation/Cancel Pause Irrigation (ACC Only)*

The Pause command will stop any stations or programs irrigating in an ACC controller, until they are started again. The Pause will continue for 30 minutes, or until it is resumed, exactly the same as pushing the Pause button on the ACC controller (the controller display will show any stations running with "Pause" in the display, and the remaining time on the Pause)..

Pause will freeze all stations or programs, and when they are resumed, they will resume from the point at which they were paused. If no resume command is received within 30 minutes the stations will resume on their own, and complete the irrigation.

This is not the same as a Sensor Alarm Pause, which will remain paused until the sensor is restored to normal. The Pause command from the software or the controller will always resume after 30 full minutes.



To resume irrigation before 30 minutes have elapsed, click the Cancel Pause Irrigation and the stations or programs will resume immediately.

SI/CI sites and controllers do not have the Pause function.

### *Stop Stations/Stop Irrigation*

SI/CI controllers have a Stop Station command, and ACC controllers have a Stop Irrigation command. These are virtually identical. The command will stop any stations or programs that are running.

This permanently stops the irrigation in progress, but it does not prevent future irrigation (it is different than the OFF function). If another Program start time is due only a minute later, when a Stop command has been sent, it will start normally. The stop command only stops items that were already running.

### *Repair*

(SI sites only)

Repair is a time-saving feature, when individual Controller Interfaces (CIs) must be repaired or replaced in the field.

The Repair command does not actually “fix” anything. It is used to mark interfaces CIs which must be re-addressed.

The SI interface automatically assigns addresses to the individual CIs, upon request.

If a CI in the middle of the address sequence must be re-addressed, you can mark it for Repair (right-click on the controller in the software and click Repair). This notification is immediately sent to the SI.

After the CI has been repaired in the field and needs an address assigned, place the SI in “racetrack” mode (the addressing mode) and it will assign the Repair address to the next request it hears.

This number will flash in the display, alternating with the racetrack display.

Go to the repaired CI and press the button to request an address. The number will be assigned to the CI.

Example: There are 5 controllers on a Site, and number 3 has been damaged.

Mark number 3 for Repair in the software.

Replace the 03 interface (CI) in the field.

At the SI, enter the addressing mode (racetrack display in the interface), then go to the number 3 location and press the addressing button.

The SI will automatically number the new interface “3” because it was marked for Repair. You will not need to address all the other CIs again.

Repair can be used to mark multiple CIs. Mark them in the software first (click Repair for each controller that needs service).

When the interfaces are replaced in the field and ready for re-addressing, visit them in numerical order. The SI will assign the Repair numbers in order, as the requests are made.

#### *Reset Sensors* (SI Sites only)

Reset Sensors - this will reset any Sensors in an alarm condition that have been programmed with a manual reset only, or those programmed with a timed reset which have not yet timed out. Note that if the alarm condition still exists in the field, they will return to the alarmed state again (after any programmed Start-up Delays have expired). This is used to clear nuisance alarms or to reset once repairs have been completed.

#### *Configure Hardware*

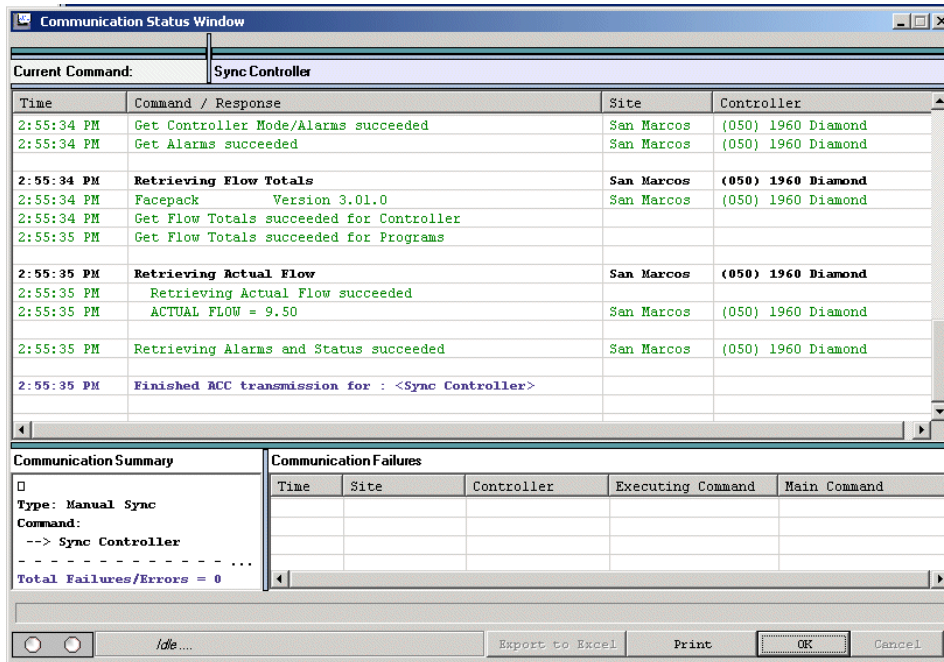
Shortcut to the Hardware Configuration tab for the selected controller.

## **Communications**

Communications are one of the most important elements of a successful central control system. IMMS has greatly enhanced communications abilities and diagnostics, especially with the ACC controllers.

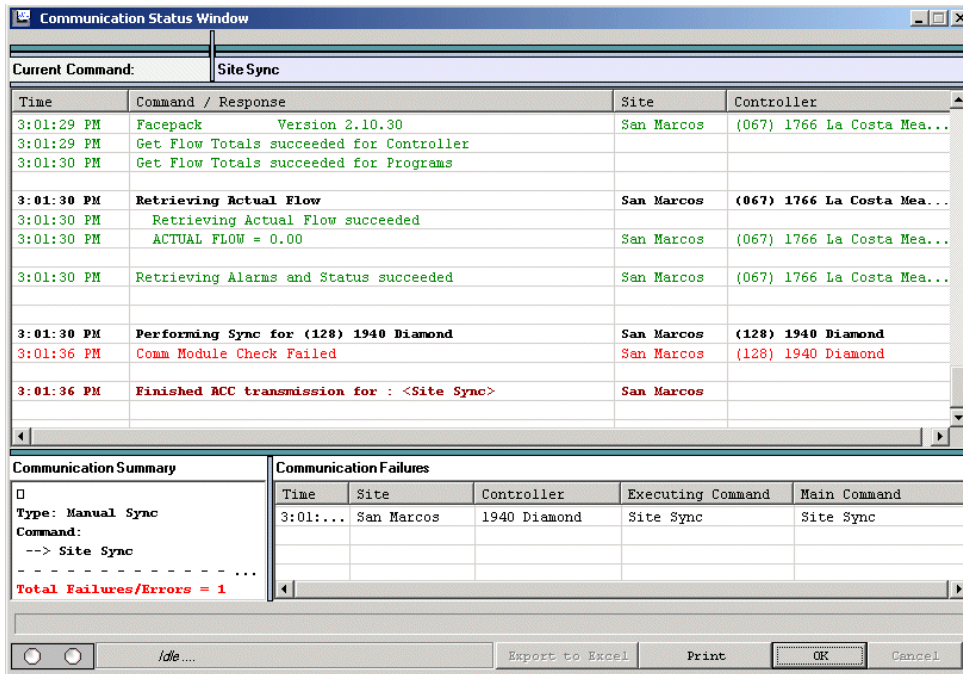
In the section, Setting Up IMMS to Communicate, the basics of selecting com ports and setting site hardware and modem options are covered.

IMMS also provides detailed feedback, histories, and communications diagnostics. All communications activity is now visible in real time, in the Communications Status window.



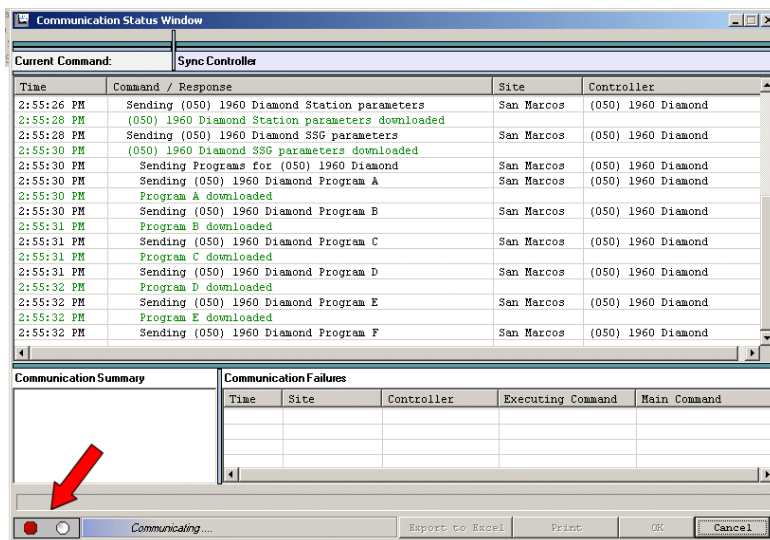
As communications take place, each step is divided into two-way pieces of activity that are visible in this window.

All successful activities are in green. Failed attempts are in red. Some notifications which are not alarms are in blue.



When communications are complete, a summary of any failures appears at the bottom of the window. You can scroll back through all recently completed steps of any communication activity to verify success and look for failed items.

During communications, actual transmit and receive activity is always shown with colored lights (red = transmit, green = receive) and an activity bar.

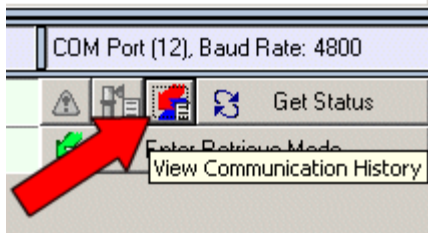


If communications seem excessively long, verify that the lights are still lighting and the *Communicating* bar is still animated. As long as they are active, communications are still taking place.

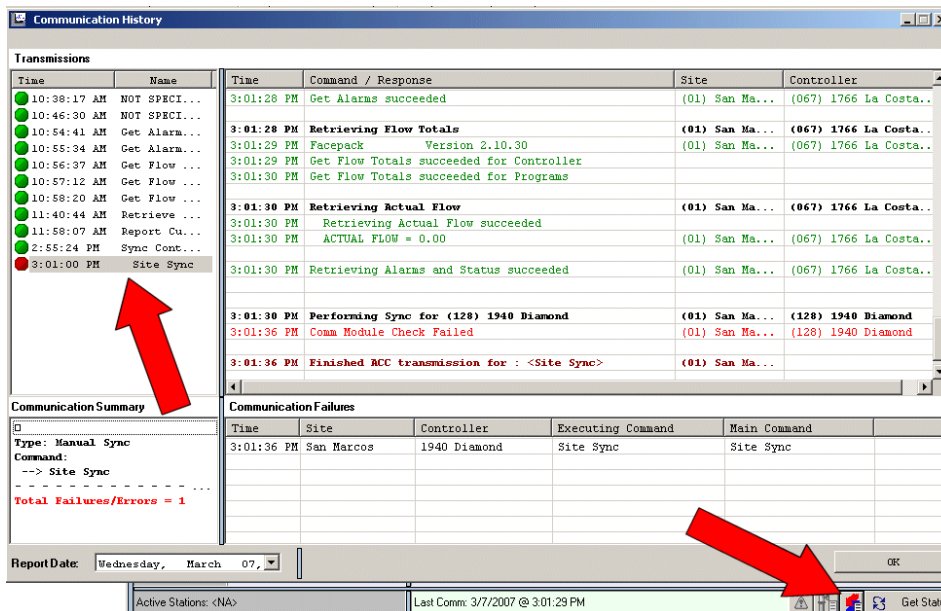
The Home screen now offers multiple tools for communications diagnostics.

### Communications History

The View Communications History button, in the lower right corner of Home, allows a step-by-step report of communications history, where even unattended, automatic communications can be reviewed later.



Clicking this button causes the Communications History report to appear.



In the left window, the colored LED lights show successful and failed communications activity.

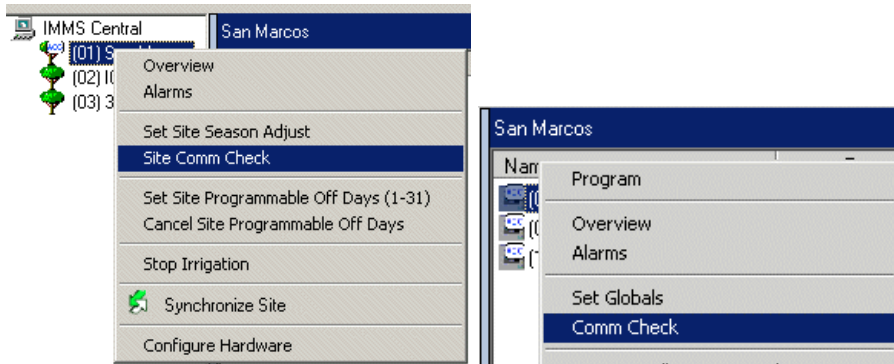
Click any item to highlight it, and the individual events will appear in the right window (you can scroll through them if there are too many to see at once).

This comm history report can also be printed and exported.

If you need help diagnosing a communications problem, emailing this report can be extremely helpful.

The Home screen also allows you to initiate a Comm Check, with any controller or Site (this checks all controllers on the site).

Right click on the item and select Comm Check from the drop down menu.



This initiates a short communications check which exchanges data with the controller and displays results. As usual, green is good, and red is bad.

Current Command:		Controller Comm Check	
Time	Command / Response	Site	
3:40:54 PM	Connecting to San Marcos via hardware	San	
3:40:54 PM	Connected : <Baud: 4800, COM Port (12)>	San	
3:40:54 PM	Performing Comm Check	San	
3:40:54 PM	ACC-COM-POTS Version 1.02.1	San	
3:40:54 PM	ACC-HWIM Version 1.02.3	San	
3:40:54 PM	Facepack Version 3.01.0	San	
3:40:54 PM	Finished ACC transmission for : <Controller Comm Check>		

## Common Communications Issues

### Computer:

Computer com port setting is incorrect, or set to None.

Site Hardware configuration is incorrect, or telephone number is incorrect.

Address for controller is not set, or is set to the wrong address.

Tip: Modem communications problems can be analyzed by turning Modem volume on, and up loud enough to hear, in the computer settings. Often the dialed number causes a recorded announcement from the telephone company that will explain the problem, which can be heard over the modem audio.

#### **Hardwire/CCC:**

CCC has no power (check green power LED).

Bad serial/USB cable to CCC (look for Transmit and Receive LEDs on the CCC to flash).

Miswired GCBL cable, or wrong cable.

Wrong Com port setting for CCC.

#### **Dial-Up Telephone (POTS, or Plain Old Telephone Service):**

Telephone cable too long (spec is 6 ft/2m) and electrical noise is interfering with data. This is one of the most common problems and is difficult to diagnose. Use of shielded telephone cable may help. Cable runs between telephone company service and Master controller or Site Interface must be as short as possible, and should avoid any source of electrical noise.

Other Device (fax, alarm, etc.) is grabbing the line first. IMMS requires a dedicated line and will not share with other devices.

Service disconnected, no dial tone.

**Tip:** When in doubt about telephone service at a location, call the location with a normal telephone, and listen to the results. An IMMS device will answer after the first ring, and data will sound like a fax machine. If noise on the phone line at the site is suspected, plug an analog phone into the site phone jack and listen for noise, static, or humming.

Sometimes recorded announcements are heard, indicating problems with the telephone service or that a wrong number has been dialed.

#### **Cellular/GSM:**

- ❑ Circuit Switched Data (CSD) must be active on the mobile account.
- ❑ DATA telephone number must be used. Service providers often give only the voice number, which will not work. If CSD is active on the account, the DATA number must be obtained.
- ❑ Device antenna must be within GSM coverage area. Green flashing LED on IMMS-CELL-GSM, or activity indicator in ACC-COM-GSM, will show whether active mobile service is detected.

**Tip:** When in doubt about GSM service at a location, call the location with your mobile or other telephone, and listen to the results. An IMMS device will answer after the first ring, and data will sound like a fax machine. If a new GSM installation answers the call, but no exchange of data takes place, it is usually caused by dialing the *voice* telephone number on the CSD-enabled account. Contact the service provider and request the DATA telephone number.

#### **UHF radio:**

Interference on local frequency (use scanner or radio with audio to listen to licensed frequency for interference).

Poor antenna selection and/or placement.

Bad cable or connectors between radio and antenna.

**Tips:** When problems are observed in radio communications, observing a pattern of failure is an important diagnostic tool.

If only certain locations have problems and others are usually OK, the problem is likely at the controller location. Usually this is solved by choosing a directional antenna and/or elevating the antenna.

If problems are spread evenly over all locations, the central antenna at the Master Controller or Site Interface are more likely to blame. External radio interference may also cause this.

If problems are intermittent, occurring more frequently at certain times of day, external radio interference is suspect. Obtain a programmable scanner or two-way radio on the operating frequency and listen for voice, data, or other radio noise.

### **Retrieve Mode: Flow Histories and Controller Programs**

#### **Retrieve Controller Info**

The Retrieve screen shows the same information for a controller that the Scheduling screen, but in a different layout to enable easy comparisons between *stored* information (in the computer), and *retrieved* information from the controller.

ACC controllers may be edited 1 of 2 ways: from their facepack control panels in the field at the controller, or from IMMS 2 software at a central computer.

When ACC controller information is retrieved from the field controllers by IMMS 2, it is NOT automatically saved. It is held on-screen temporarily so the operator can compare the controller information with the computer information. Then, if desired, it can be saved (Replace Controller button). If the changes are not acceptable, the computer operator can replace the controller data with the information from the computer.



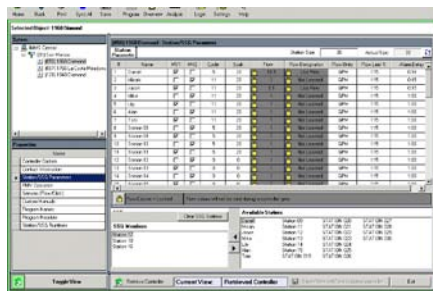
Pay attention to the colored frame around the Retrieve Controller Info screen.

Blue frame indicates the information already stored in the computer.

Green frame indicates the retrieved information from the controller.



### Blue - Computer

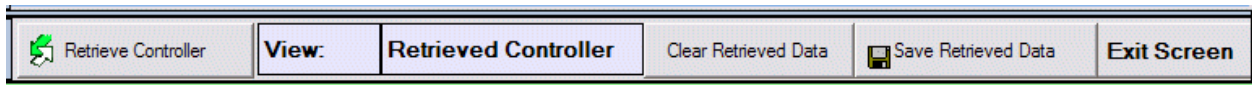


### Green - Controller

The Green framed data is not automatically saved!

It is only held temporarily, so you can inspect it, and compare it to the Blue data which is already in your computer.

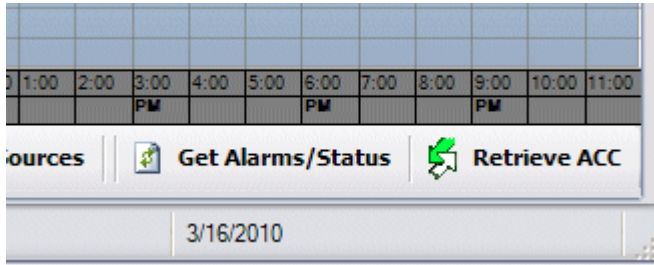
If you choose to save it permanently, you can do so by clicking the Save Retrieved Data... button.



If you would rather delete it and replace it with the information from your computer, exit without saving, and re-Synchronize the controller!

### To Retrieve a Controller's Program Data

At the Home screen, click the Enter Retrieve Mode button (lower right). The screen will change to the Retrieve Controller Info view.



Click a controller in the upper left to retrieve.

Click the button at the bottom, Retrieve ACC, to get the latest configuration from the controller. Click to confirm. Communications will begin.

The communications window will show the progress of the retrieval including version numbers of all firmware devices in the installation.

Current Command:		NOT SPECIFIED		
Time	Command / Response	Site	Controller	
10:46:44 AM	Retrieve Custom Manual 1 succeeded	San Marcos	(050)	1960 Diamond
10:46:45 AM	Retrieve Custom Manual 2 succeeded	San Marcos	(050)	1960 Diamond
10:46:46 AM	Retrieve Custom Manual 3 succeeded	San Marcos	(050)	1960 Diamond
10:46:47 AM	Retrieve Custom Manual 4 succeeded	San Marcos	(050)	1960 Diamond
-----				
10:46:47 AM	Retrieving Controller Information	San Marcos	(067)	1766 La Costa Mea...
10:46:47 AM	ACC-COM-HWR Version 1.03.1	San Marcos	(067)	1766 La Costa Mea...
10:46:47 AM	ACC-HWIM Version 1.02.3	San Marcos	(067)	1766 La Costa Mea...
10:46:47 AM	Facepack Version 2.10.30	San Marcos	(067)	1766 La Costa Mea...
10:46:47 AM	Retrieve Contact Info succeeded	San Marcos	(067)	1766 La Costa Mea...
-----				
10:46:48 AM	Retrieve Program (A) Name (067) 1766 La Costa Meado...	San Marcos	(067)	1766 La Costa Mea...
10:46:48 AM	Retrieve Program (B) Name (067) 1766 La Costa Meado...	San Marcos	(067)	1766 La Costa Mea...
10:46:48 AM	Retrieve Program (C) Name (067) 1766 La Costa Meado...	San Marcos	(067)	1766 La Costa Mea...
10:46:48 AM	Retrieve Program (D) Name (067) 1766 La Costa Meado...	San Marcos	(067)	1766 La Costa Mea...

When the Communications Status Window displays “Finished Retrieving Controller Info”, click OK to close the window and return to the Retrieve screen.

The controller information is displayed by category, or Properties. Click an item in the Properties window, to see the retrieved information for that item.

You can use the down arrow key on the keyboard to step down through each Properties item.

The green frame indicates the retrieved information.

Click the Toggle button at the bottom to switch from the green frame to the blue one. The blue data is the computer’s database, or what is currently saved for the controller in the software.



By Toggling between the Green and Blue settings, you can rapidly compare the software settings with the controller info from the field.

### **Replacing Controller Data**

The controller will always water and behave according to its own information. The controller will irrigate according to the information in the controller's facepack, represented by the green framed data.

If the software (blue) and controller (green) information are not the same, there are two ways to make them agree.

1. You can replace the controller's information with the saved data in the computer (in effect, overriding the changes made in the field).
2. You can update the software with the field information. In effect, this means approving the field changes, and adding them to your computer's saved database.

If an unauthorized or unknown person has made the changes, you might wish to take the first option, and replace the controller's data immediately. This will force it to match the IMMS software again.

To replace the changes in the controller with the software's original information:

First, exit the Retrieve screen without saving.

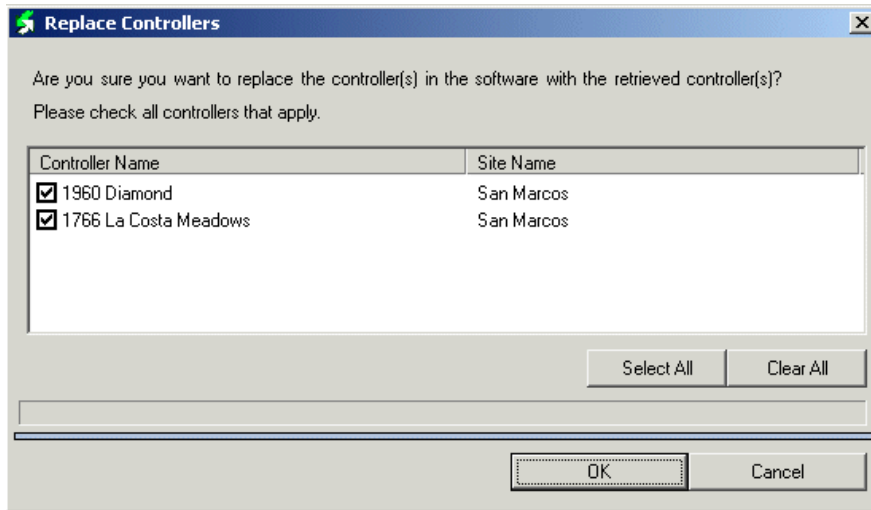
From the Home screen, right click on the controller and click Synchronize Controller. This will immediately download the stored, saved information from the computer to the controller. The changes made in the field will be permanently replaced.

If the changes made in the field are acceptable, perhaps made by you or an authorized person during a field inspection, you can add the field changes to the computer's permanent database.

To save the field changes to the software, make sure you are in the green-framed controller information.

Click the Save Retrieved Data... button.

A window will appear asking you to confirm the decision. If sure, click the OK button, and the computer will save the field edits to the permanent database.



When multiple controllers have been retrieved, you have the option (with the checkboxes) to replace only the controllers you designate without changing the rest.

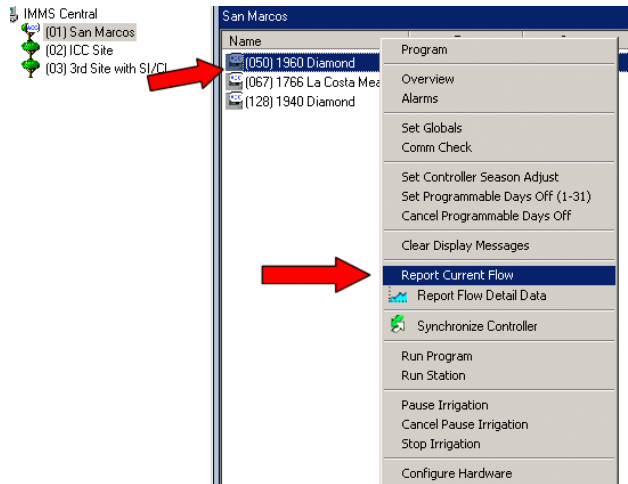
You may also retrieve extensive changes made in the field, and Save As a different database. This allows you to edit controllers in the field for unusual conditions or irrigation practices, retrieve this new info to the central software, and Save As a new name, without overwriting your existing database.

### **Retrieve Flow Histories (actual)**

There are several ways to retrieve actual flow from an ACC controller.

The simplest is to allow the central to retrieve flow totals on automatic Synchronization. If the system is set to Synchronize once per day, the flow history will be retrieved automatically.

The totals can be updated manually at any time with the Report Current Flow command, available from the drop-down menu by right-clicking a controller.

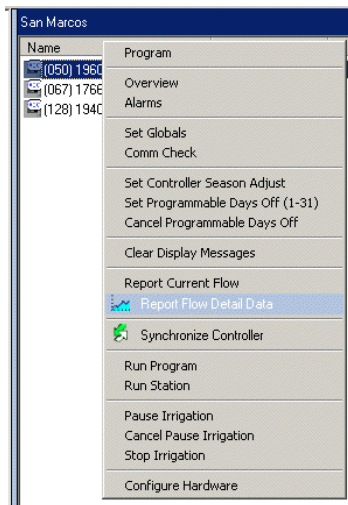


This will initiate communications, and will retrieve current actual flow at the controller as well as the Flow Totals reports available from the controller facepack (this does not clear the flow log in the controller).

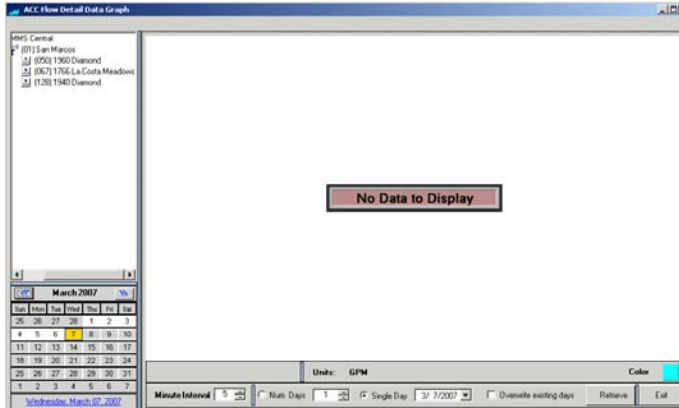
These totals are now shown in the Communications Status window.

A much more detailed report is possible with the Report Flow Detail Data command. This will retrieve more detailed information, but may also require a very lengthy upload communication.

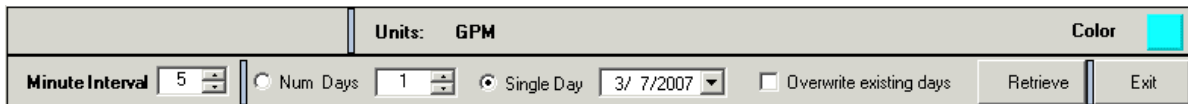
Right click the controller and select Report Flow Detail Data from the menu.



This will open the Flow Detail Graph. If no information exists yet for the selected day, it will simply say No Data to Display until you have retrieved details.



At the bottom of the screen are options to select before communications begin to retrieve the flow detail data.

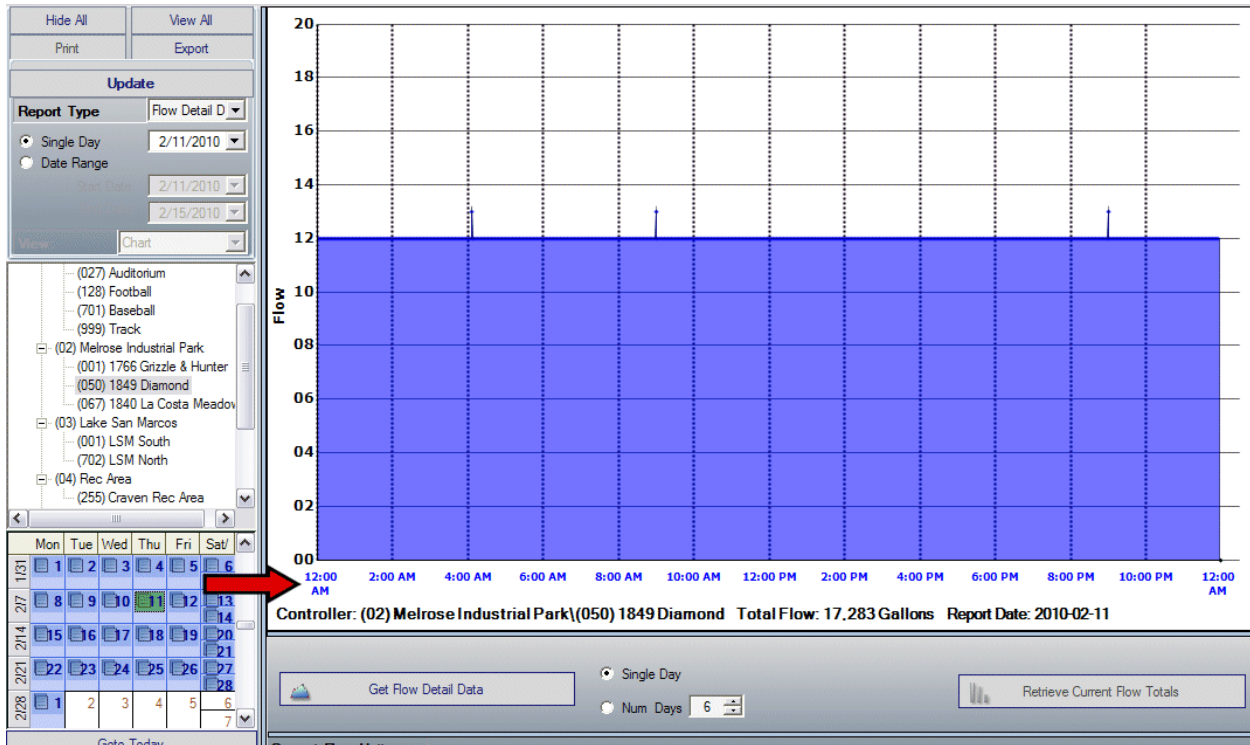


**Minute Interval** selects the amount of detail you will see in the graph. It does not affect the size of the upload from the controller, since all data is retrieved in any case. However, setting longer intervals in the graph will have a smoothing effect on the overall view of flow.

**Num(ber) of Days** is the number of days worth of detail you can elect to retrieve from the controller. This can have a serious effect on the length of the communications! The number can be from 1 to 31 days. There are 1440 datapoints per day (one per minute), so a 31-day upload can take quite a while.

**Single Day:** You can also target any single day within the last 31 days. Click the Single day button, and then click the down arrow to select any one day within the last 31 days from the drop-down calendar, and it will retrieve only that one day from the controller.

After the data is uploaded from the controller, the flow will be displayed as a graph.



The calendar in the lower left corner can be used to navigate to flow details for any given date, if flow data has been retrieved for that date. If no data has been retrieved for the day, the No Data to Display box will appear.

**The controller only holds flow data for 31 total days.** If flow has not been retrieved for a day after 31 days, the data is lost forever.

Flow Detail can also be viewed and exported as a spreadsheet in the reports.

## Graphics – Creating and Using a Map Interface

### Graphics Concepts

Graphics are a convenience, not a requirement. You can operate all features of IMMS with no graphics at all, if necessary.

It is possible to create graphical views from one large graphical file, or map. You can create control boundaries to identify different Sites or Controllers within one map file. This approach works best with single-site systems, or multi-site systems within a smaller geographical area.

It is also possible to create a different graphical map file for each Site, and even for each Controller. This is more work to set up, but can create a much more detailed view down to the smallest levels. It is also better-suited to large areas that span a wide geographical area.

Therefore, it is possible for some users to have one map file, and others to have many different map files. It is possible to start with a single map, and expand over time to include multiple maps.

It is possible to place individual stations in graphics, for control purposes. However, this is not required, and any station or valve can still be operated from the graphical menus, even if they are not placed in the graphical maps.

### **Maps, Images, and Symbols**

A map is a stored collection of visual information for any of the levels (System, Site, or Controller) in IMMS. The map will have its own file format, called “.smp” (site map). The map usually consists of a background image, with boundaries and symbols placed on it for reference and control purposes. The map will have a name, and will appear in the Maps folder of the IMMS Data directory.

For every separate map in a system, there is a corresponding .smp file in the Maps folder.

An image is the photograph or picture that forms the background for the map. The image is usually a JPEG graphic. It is also possible to use BMP, TIF, GIF, and PNG formats. These types of files are often referred to as “raster” based images, because they are composed of pixels, like a photograph.

Individual image files should be no larger than necessary for optimum performance. Extremely high resolution photos may slow down the computer’s response time when moving around in a map.

Symbols are the graphical tools and markers you place on top of the image to access different components of your irrigation system. Symbols include both Boundaries and small icons, among others.

Boundaries define the area of the map that represents a Site, or a Controller. The icons may represent Controllers or Stations (valves). Other objects may be added, but these are the two most common and powerful examples.

Symbols are “vector based” graphical objects, meaning they define exact points in a coordinate system, and are not composed of pixels. They are similar to CAD objects.

### **Map Image Sources**

IMMS Graphics includes the ability to import bitmap images (JPEG, TIF, GIF, PNG, or BMP formats) as backgrounds for the placement of irrigation control map objects.

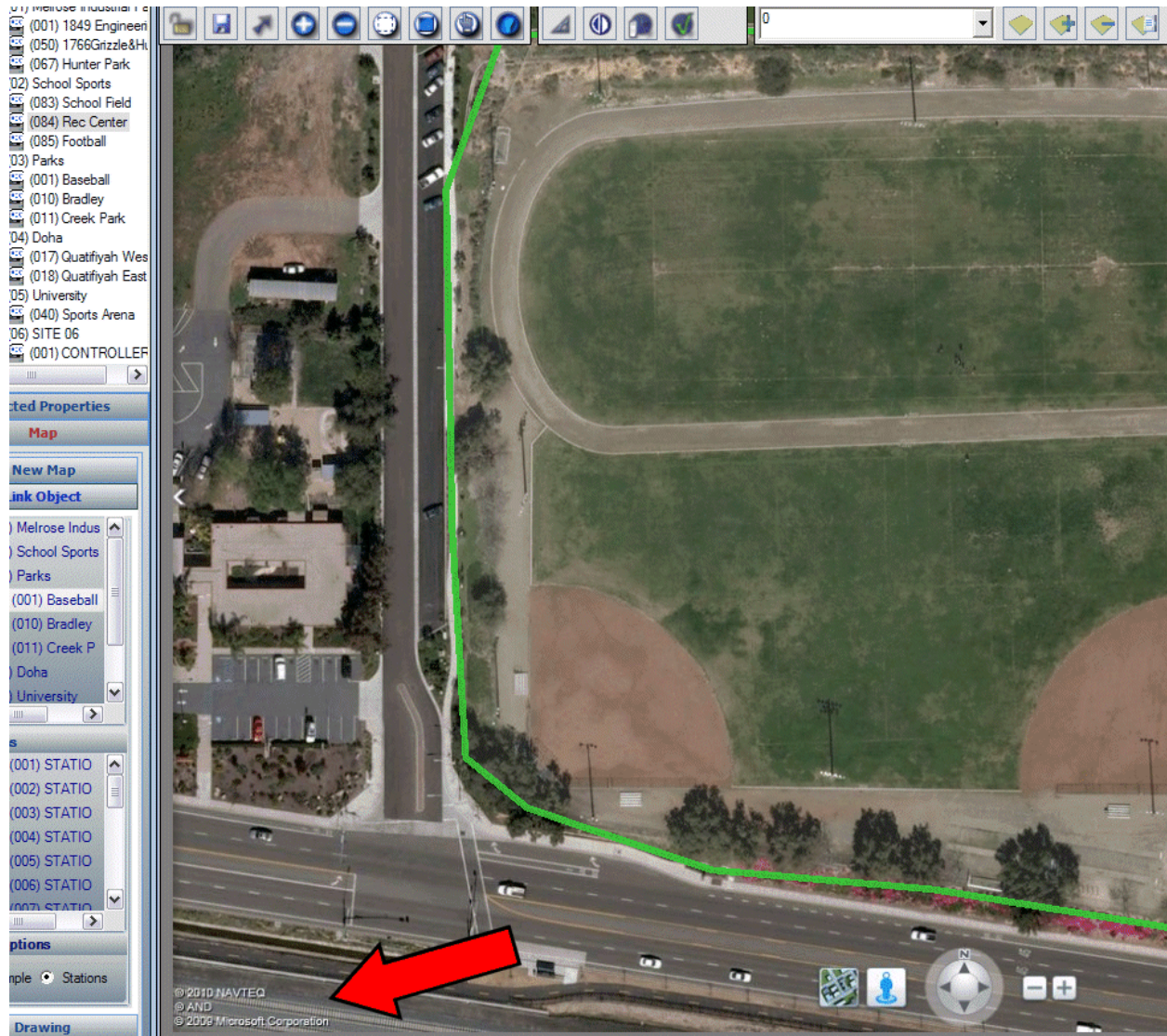
IMMS Graphics does NOT include ANY graphical maps or images. Use of such images is optional, and they would be unique to each instance of IMMS. IMMS Graphics provides standardized drawing tools for irrigation control objects, only.

Providing custom background images of suitable quality is the sole responsibility of the end user of IMMS, and Hunter Industries makes no guarantee that such images exist or will be available.



End users assume sole responsibility for compliance with copyrights, fees, or other terms of use for all images imported into IMMS.

Many, not all, of the graphical examples used in this section for demonstration are from Bing Maps, copyrighted by Microsoft and Navtec. Attributions appear in most, if not all, of the aerial image captures.

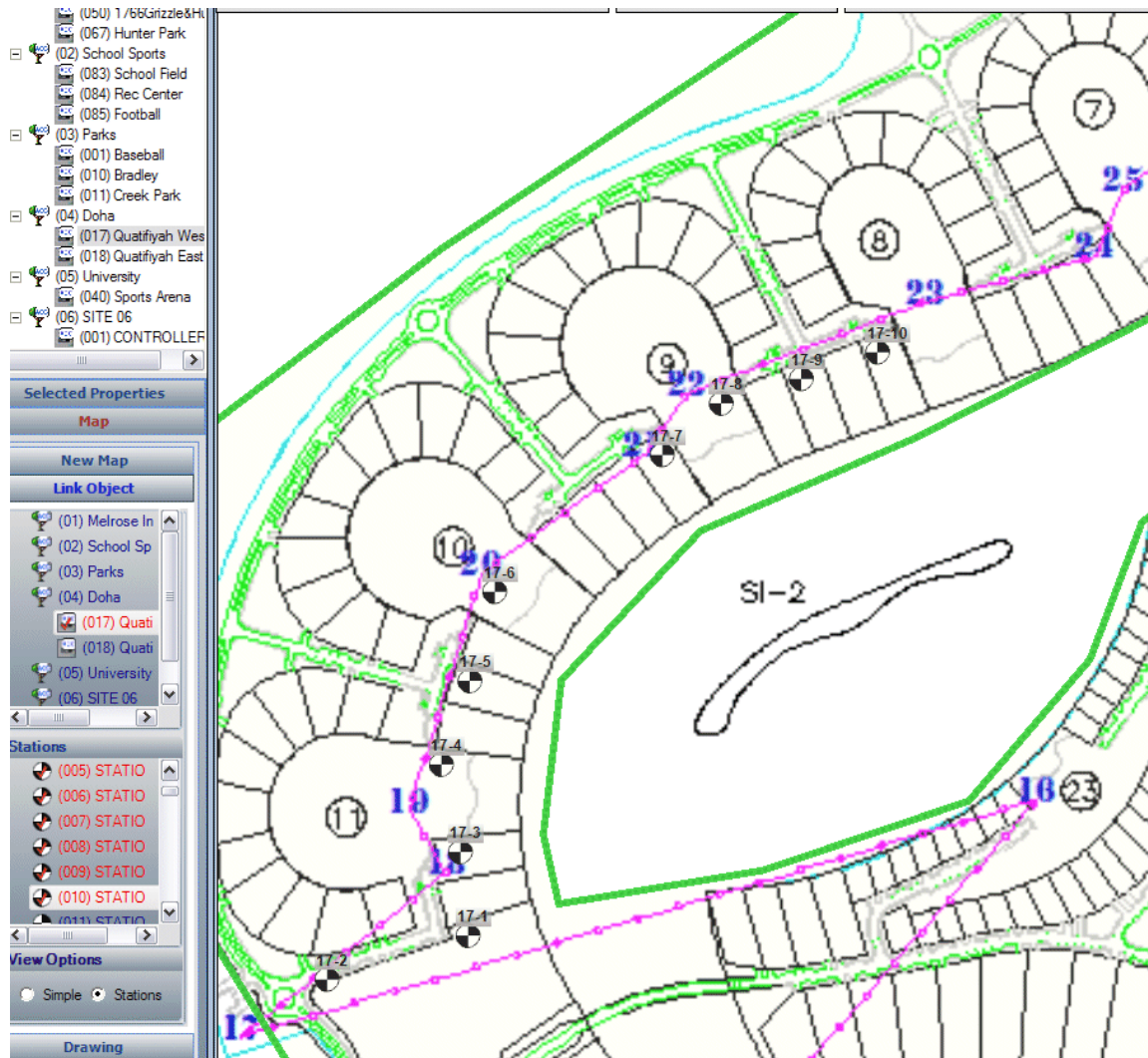


IMMS is not linked to online graphics of any kind and the use of these graphics is instructional only.

Other examples of possible images are shown below:

### **AutoCAD background**

CAD linework saved as GIF file and used as background image.



## Artwork

Artist's View used as background image.



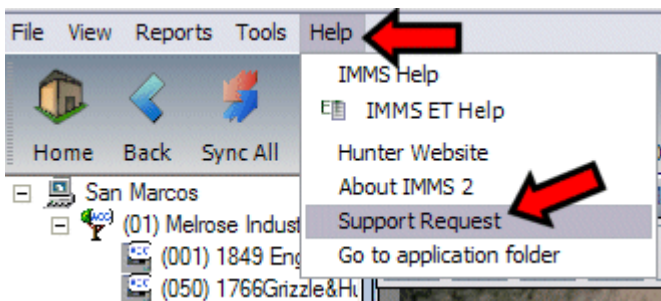
Even hand-drawn objects or road maps can be used as background images, if scanned into an acceptable digital format.

## Map Backups

- ⇒ The Map folder is not technically part of the database, and will NOT be backed up during a normal database backup. Map details and images are not stored in a “BAK” file.

The Maps folder and its contents should be backed up and saved, however. If anything happens to the computer, the Maps should be stored safely for restoration. These files may contain much information, and require much work to set up.

The easy way to backup Maps is to create a Support Request zip file for your archives. Click on the word Help in the menu bar, and choose Support Request.



The support request will create a zip file that compresses all common files used in IMMS, including the Maps.

**Hunter Support Files**

**Advanced Support Request**

Product: IMMS      Version: 3.0.0.23

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**Contact Information**

Name: Dave      E-Mail: dave@sanbarcos.com  
Address: 1840 La Costa Meadows  
City: San Barcos      State: CA  
Phone: 1 (760) 591-7344      Country: USA

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**Supporting Files (attachments)**

File Path
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Bak\SanBarcos_2010-03-15.bak
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps\SanBarcos\1766.smp
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps\SanBarcos\1766Grizzle&Hunter.jpg
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps\SanBarcos\1849Engineering.jpg
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps\SanBarcos\1849Engineering.smp
C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps\SanBarcos\Baseball.smp

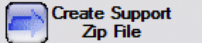
Automatically include Database Backup

---

**Description of Problem**

Please describe the problem and the steps to reproduce it (500 characters max)

Ready

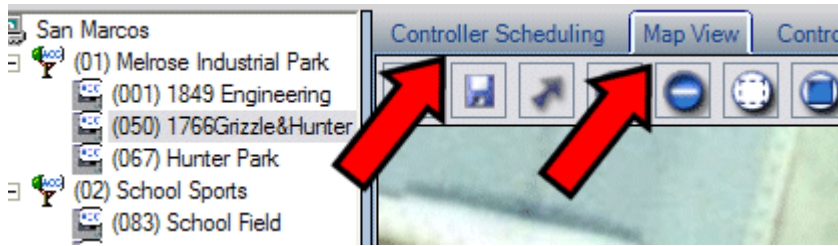
 **Create Support Zip File**      **Exit**

It will be stored in the Support Requests folder. Save a copy of this Support Request on a CD, flash drive, or other safe and separate storage medium to keep a permanent record, in case you ever need to restore the graphics.

## Operating Mode

Operating a system with map graphics provides a unique level of control and convenience. The map graphics are not required to operate the system, and they may be added in the future if a quick system start-up is desired.

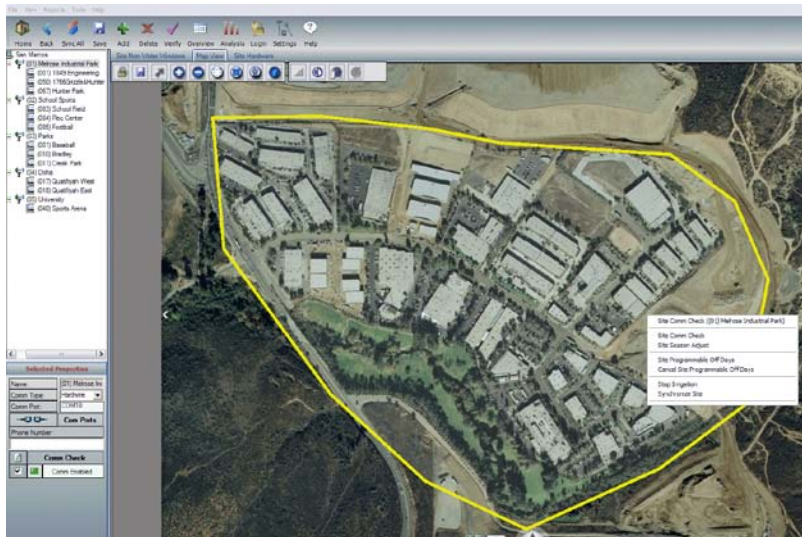
IMMS 3.0 and later have a new tab, called the Map View. This is next to the Controller Scheduling tab. There can also be a Map View tab at Site and System levels.



With map graphics already loaded, you will find you can perform most common functions directly from the maps.

Detailed controller programming is still performed in the Controller Scheduling tab. All other tabs still have their original functions (Non-Water Windows, Controller Hardware, Station Settings, ET Settings, etc.).

If you click a Site to select it, then right-click on the Site, the drop-down menu will appear for common Site commands. If you click a Controller level boundary or symbol, then right-click on it, the controller commands will appear.



### Navigate Within a Map

The navigation toolbar at the top of the Map View graphic allows you to pan and zoom within the map, for a better view or to find small objects in a large area.



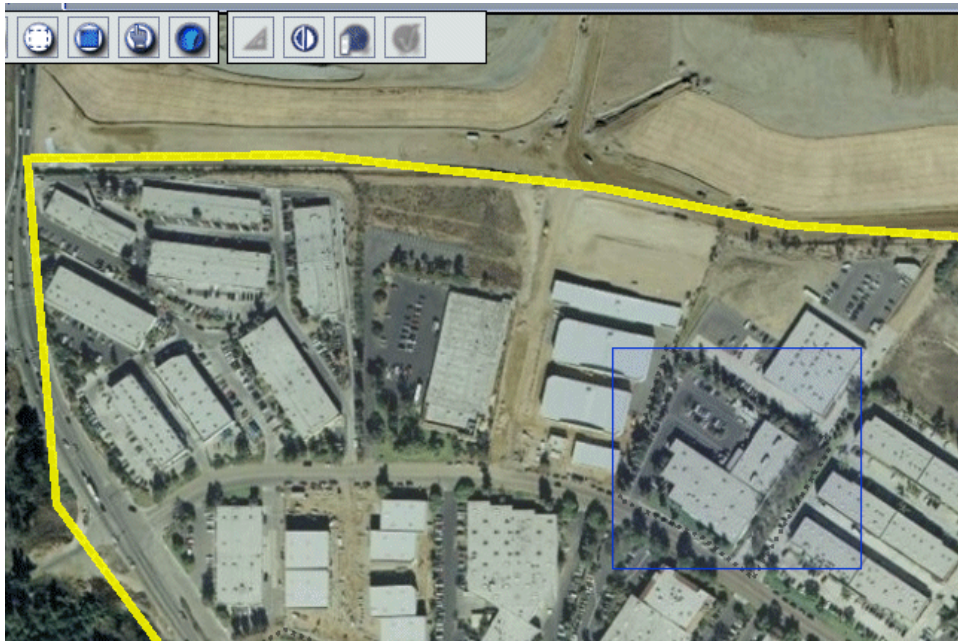
These tools are similar to navigation tools in CAD programs. Following are the most commonly used navigational tools in Operating mode.

The + and – buttons zoom straight in and out of the map, wherever it happens to be centered in the screen.

The **Zoom Window** lets you click and drag a rectangle, to which the view will zoom.



Use this to select an area of interest. When you release the mouse at the end of the rectangle, the view will zoom to the size and location of the rectangle.



Any scrolling wheel mouse will zoom in and out of the map by scrolling the wheel (you may need to click down on the wheel to activate this function). The scrolling zoom will center on the mouse location in the drawing.

The Zoom to Extents tool will return the map to the original full screen zoom.

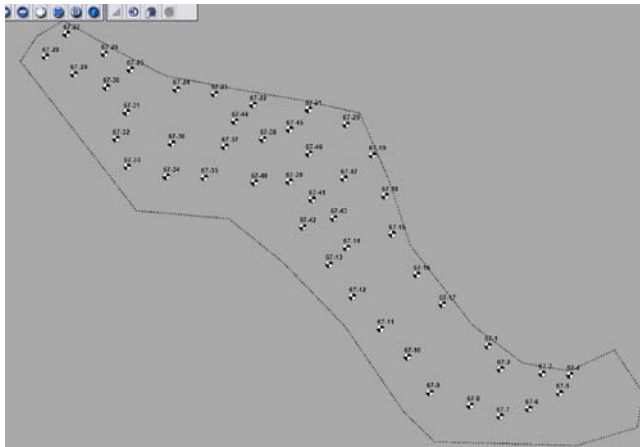


Whenever you have zoomed to an unknown point, or have inadvertently wandered off the map and it is no longer visible on the screen, click Zoom to Extents to restore the map to full view.

The Pan tool turns the mouse into a hand, to drag the map around. Click in the map and drag the view in any direction.



Toggle Background Image will turn off the background graphic, and only show the vector based objects and symbols that have been created in the map.



This can be helpful in crowded drawings, by eliminating the clutter of too much detail. All control functions continue to operate, whether the background image is on or off.

### Shortcuts and Hot Keys

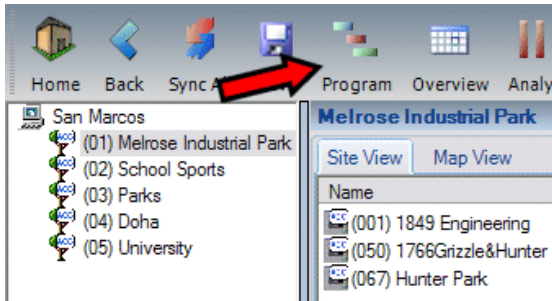
- M Move (move highlighted object with mouse)
- M, Ctrl Clone (select object, click M, then hold Ctrl to create copies of the object)
- P Pan (turns cursor to hand icon, moves drawing around)
- E Extents (zooms to map extents, OR, zooms to extents of any selected object)
- Ctrl-A Select All (objects on map- use Ctrl to deselect any unwanted objects)
- I Zoom In
- O Zoom Out
- Ctrl-S Save map edits
  - 1 In Modify, turns on Edit Points (within selected object)
  - 2 In Modify, turns on Edit Segments (within selected object)

### Viewing Controllers

IMMS opens to the Home screen. In this view, the controllers are not listed in the tree-view at the left of the viewing area. The top-level item is called the “System” view, and the Sites are listed under it.

To display the controllers in the tree-view, do one of two things:

1. Click the Programming icon at the top of the screen. This expands the tree-view to include individual controllers under their respective Sites.



2. Click a controller boundary in the map. This will automatically switch IMMS to the Programming view, and the controllers will appear in the tree-view.

### ***Station and Controller Symbols (Operating mode)***

Stations must be linked to have controls available from the map. If they have been linked, the controller and station number will appear next to the station symbol.

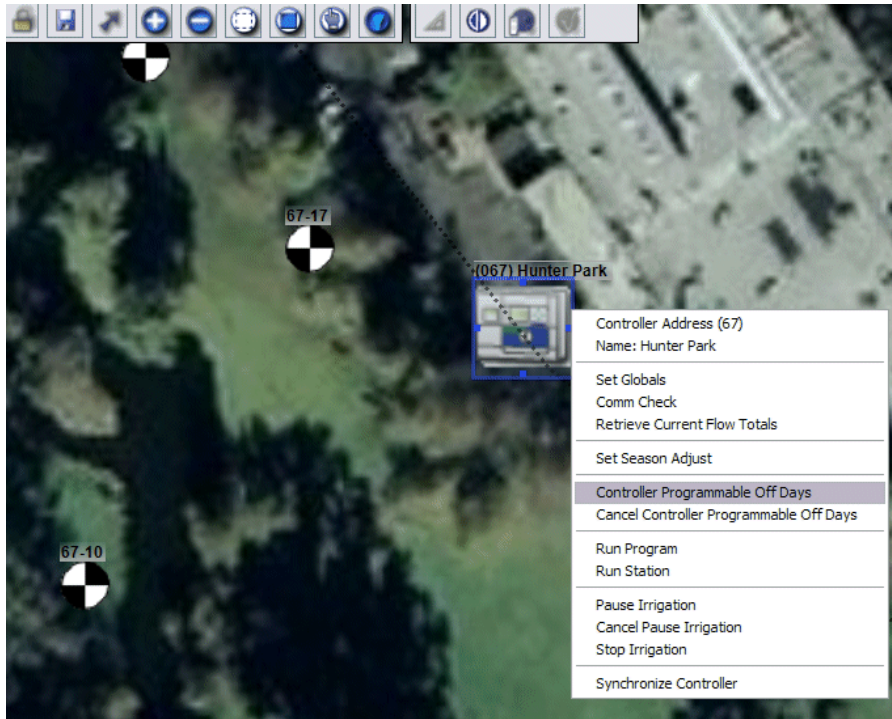


You can select, then right-click on any station in the map, to access the Run Station command for that station. Select Run Station and the Run Station dialog will appear. Enter the number of minutes for the station to run, and the command will be sent to the controller immediately.

You cannot stop an individual station in IMMS. Individual station stop is not a feature of the ACC controller. Instead, select the controller, right-click to produce the list of commands, and send Stop Irrigation. This will stop all irrigation at the selected controller.



Some maps may have symbols representing the controller itself. These have exactly the same functions available as the controller boundary. Select it, right click, and choose from the list of commands that appears.

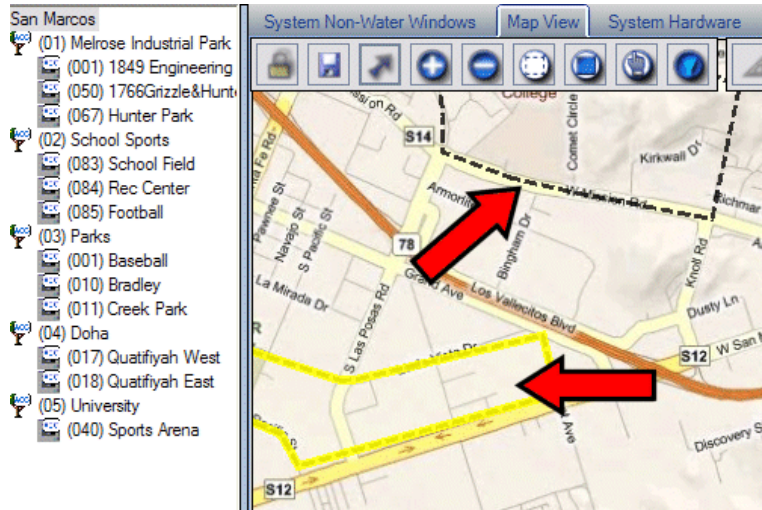


### ***Single Map System Operations***

In a single map system, all operations are performed from the same map. This uses one large map with boundaries for Sites, and even controllers, for control purposes.

The system operator will never leave the main System level map, in this case. Boundaries, or control zones, will outline the area governed by each site or controller.

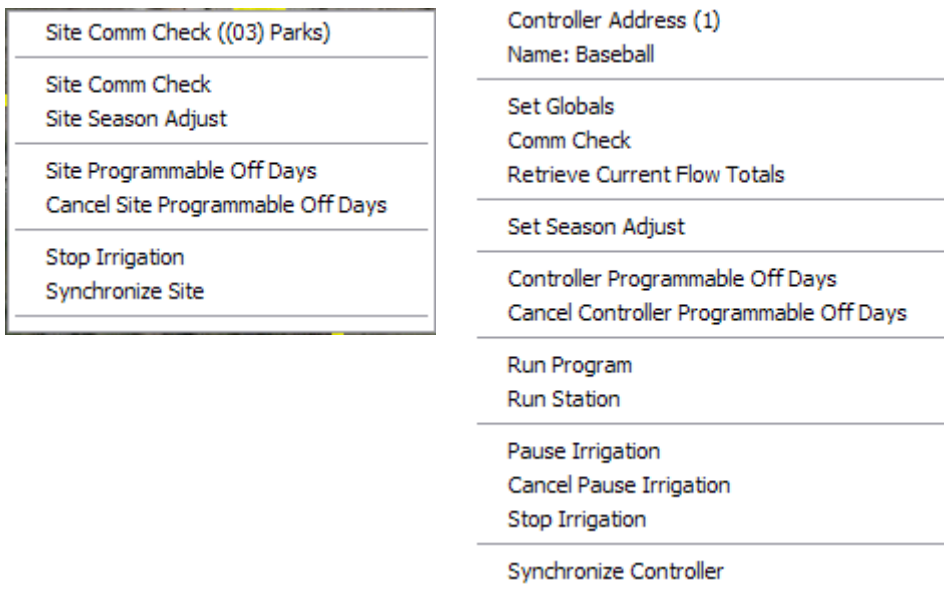
Move the mouse around the map to discover which areas highlight, when the mouse rolls over them.



Site boundaries are outlined in a different color than controller boundaries, to distinguish which type of boundary is being selected.

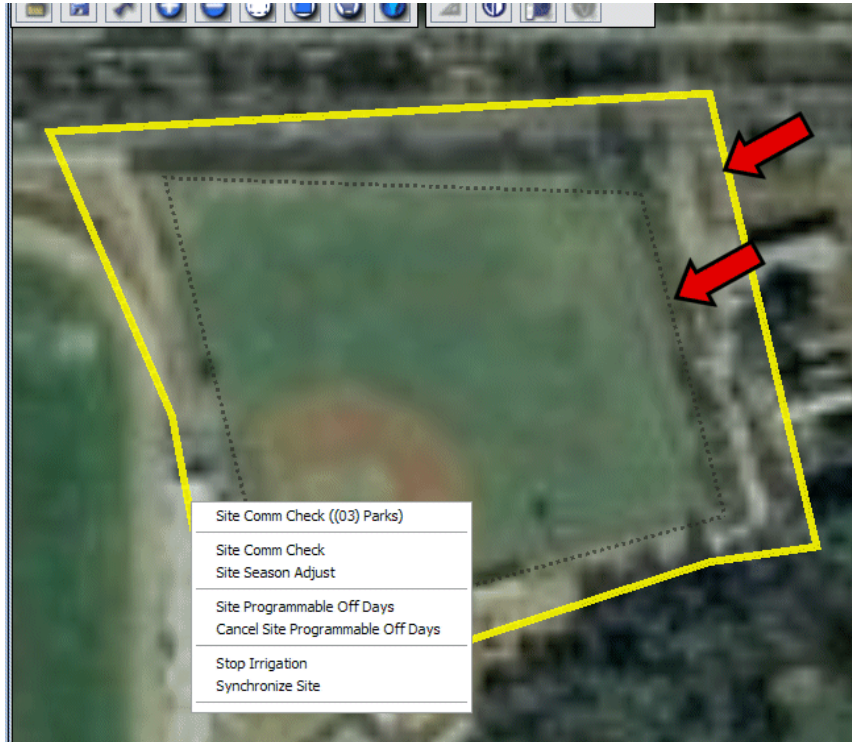
To operate from the map, click down on the boundary to select it.

Then, right-click in the area to activate the drop-down menu of commands. Site boundaries will indicate the site number and display Site commands, Controller boundaries indicate the controller address and display controller commands.



Controller boundaries are always placed ON TOP of Site boundaries. This can make selecting the Site difficult, because the controller boundaries are in the way. There are two solutions for this: 1) in Edit

mode, make the Site boundary slightly oversized, so that you can click in the area outside the controller boundaries to select the Site, or 2) use the tree-view items for Site level commands.



All command functions are still available from the tree-view, even if map graphics are created. They are two different places to access the same commands. You can right click on the item in the tree-view, or select and then right click on the boundary in the graphics.

### ***Multi-Map Operations***

In multi-map control systems, a different map is loaded for each Site, and possibly each controller, in the system.

The System level map has boundaries that are linked to Sites. Click the area of the map to control, and the view will jump to the map view for the individual Site.

You may then select the Site boundary and right click for control commands, or click a controller boundary for the controller commands.

It is also possible to assign maps to the controller level. If you click any controller boundary in a Site map, the view will jump to the controller level map.

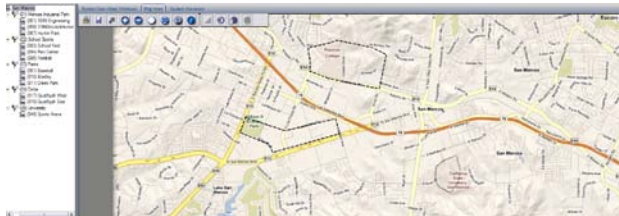
The multi-map approach allows more detailed views of individual elements like stations, with a much higher level of background image detail. It is also better for Sites and controllers that are very far apart in the real world.

For example, a System level graphic could be a simple road map of a very large area, such as a province or state. The Site boundaries on this map would jump to an actual aerial photo, or other more detailed background image. These might represent cities or parks that are very long distances from each other.

Finally, the controller level map can be used for detailed views with individual valve locations.

The operating principles are the same as for the single map system. Click the Site or Controller you want to control in the System map. The graphics will jump to a better view of that Site or Controller. Right click on any selected boundary for a drop down menu of all commands possible from the map view.

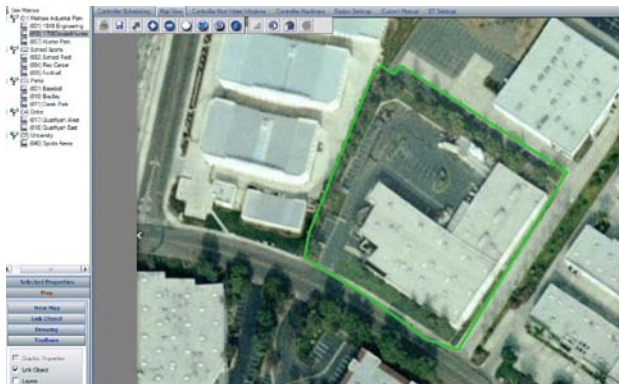
### System Map



### Site Map



### Controller Map



## Edit Mode

### Create a Map

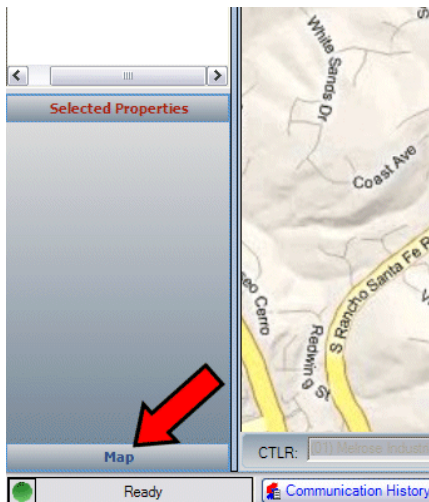
The system level (top level of IMMS) is the logical place to start. Select an image that captures the entire area controlled by the irrigation system, including all Sites and Controllers.

You may use any JPEG, TIF, GIF, PNG, or BMP photo file. See Graphics Concepts for an explanation of these terms.

An aerial or satellite photo is a common choice. For very large areas, the system map can be a simple road map view. The detailed photo images can be linked from this map at the Site and Controller levels, if desired.

Choose the images you plan to use first. Place them in the Maps folder (usually C:\Documents and Settings\All Users\Application Data\Hunter Industries\IMMS\Data\Maps) before creating a new map, to save time and avoid confusion.

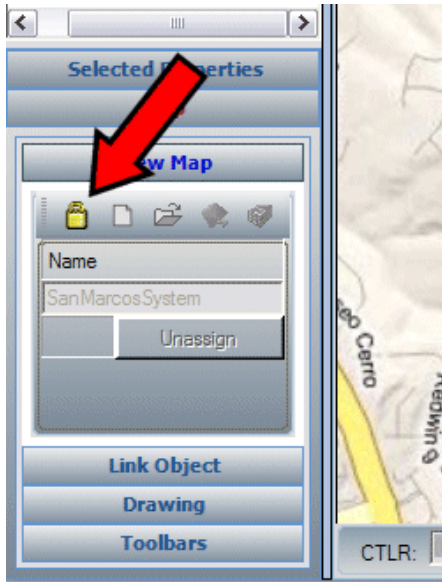
IMMS has a new selection of tools, in the lower left corner of the screen. From the Home screen, there is a bar in the lower right called Map Properties. Click this to expand the map and drawing tools.



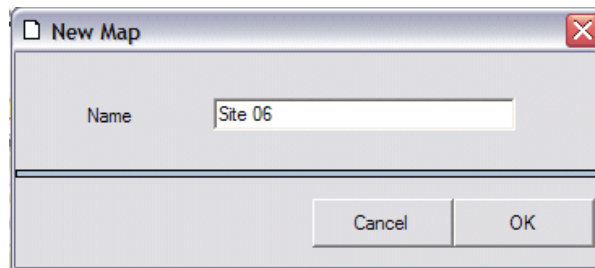
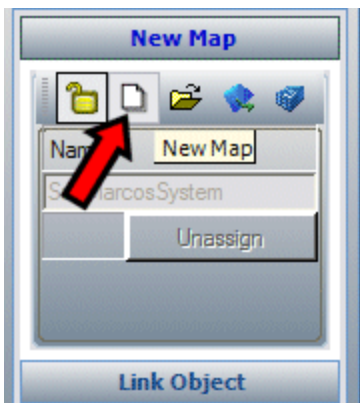
Choose the entity in the upper left portion for which you will be creating a new map. In this example, we will begin at the System level.

Click the bar called New/Load Map.

Click the padlock icon to unlock the graphic for editing.



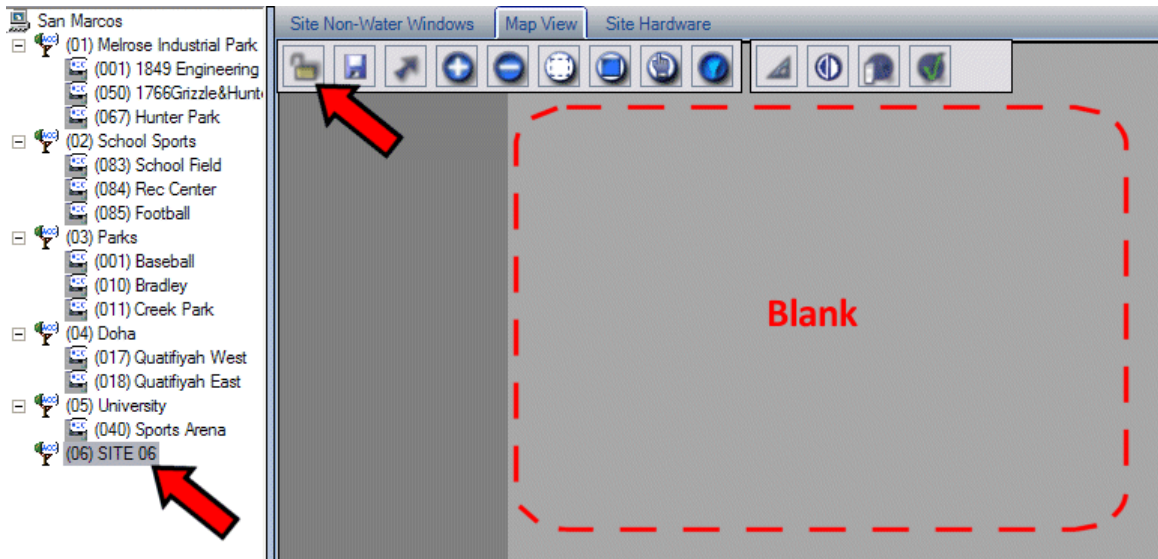
Click the New Map icon. The New Map dialog will appear.



Enter a unique name for the System (or other level) map, and click OK. This will create a .smp (sitemap) file for the map, but nothing will appear yet.

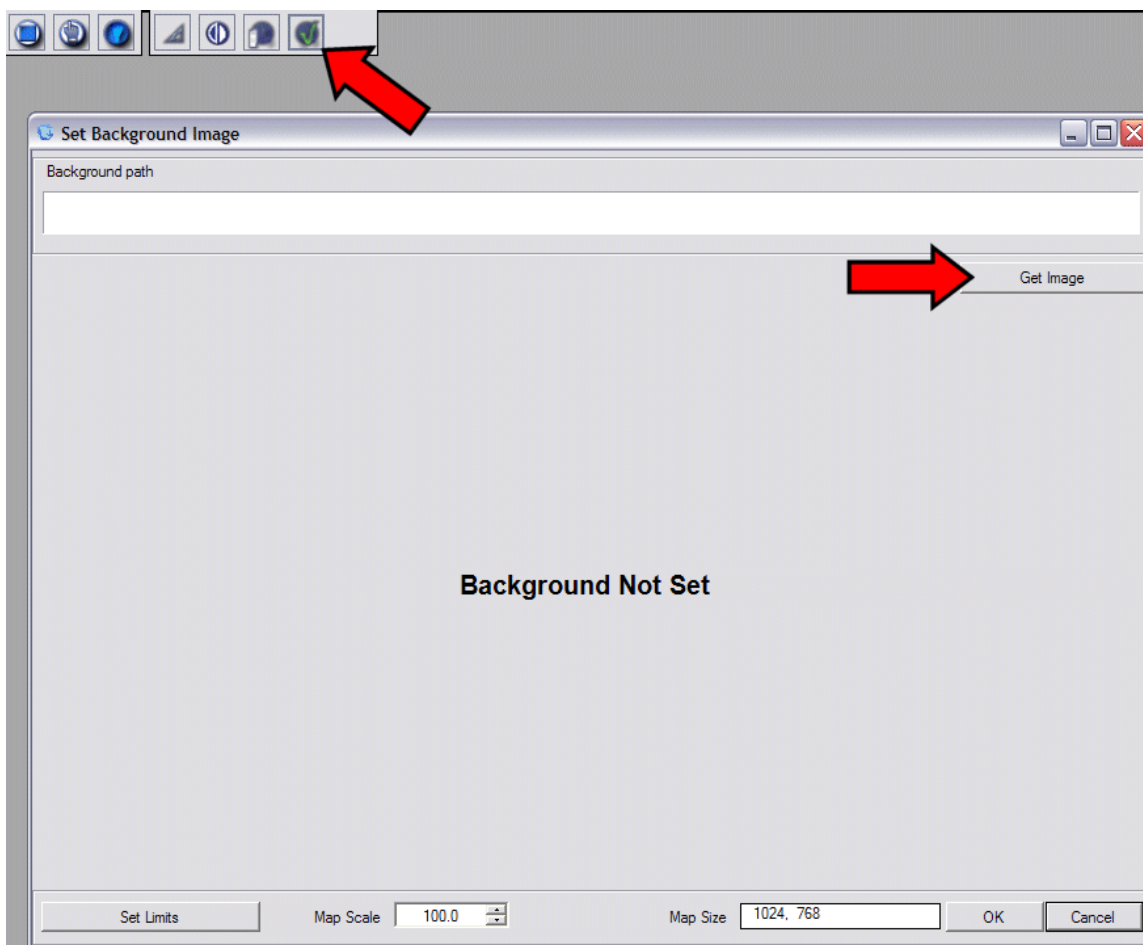
Click the Map View tab at the top of IMMS for the item you are mapping. When new, this will be a blank screen, until the System graphic is created. New Sites and Controllers will show the System level map until they are assigned the own information.

Make sure the padlock is still unlocked at the top of the Map View tab.



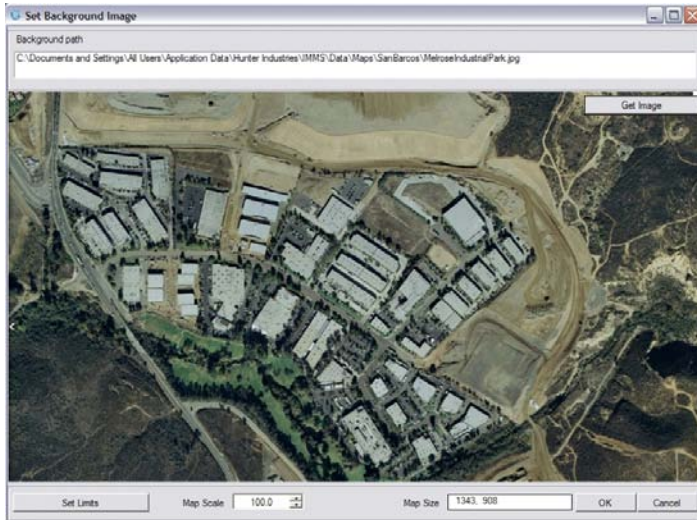
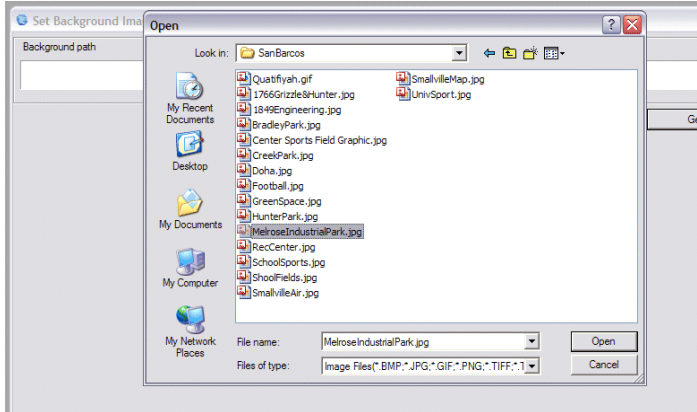
Click the Set Background Image icon.

The Set Background Image dialog will appear, and allow you to browse to your image location (the picture you will use as the background).



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Click the Get Image button in the upper right. In your maps folder, you should have a list of all graphics files you plan to use. Select the one that you want, and click Open. The image will appear in the Background window. Click OK (it is not necessary to set the other items such as Scale and Limits at the bottom of this screen).



The background image will now appear in the Map View tab in IMMS.

### ***Scale the Image***

Most imported JPEG and similar images are between 4"/100mm and 50"/1.3m in actual "print" size, but they represent an outdoor area that may span many miles or kilometers.

For realism, and especially to align imported CAD linework (future development), an imported image can be scaled to approximately "real world" dimensions.

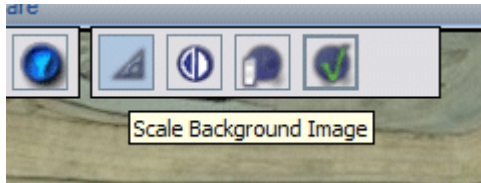
This will require a known distance between two points that are visible in the image. Ideally the two points would be very far apart in the image (such as opposite corners), for best accuracy.



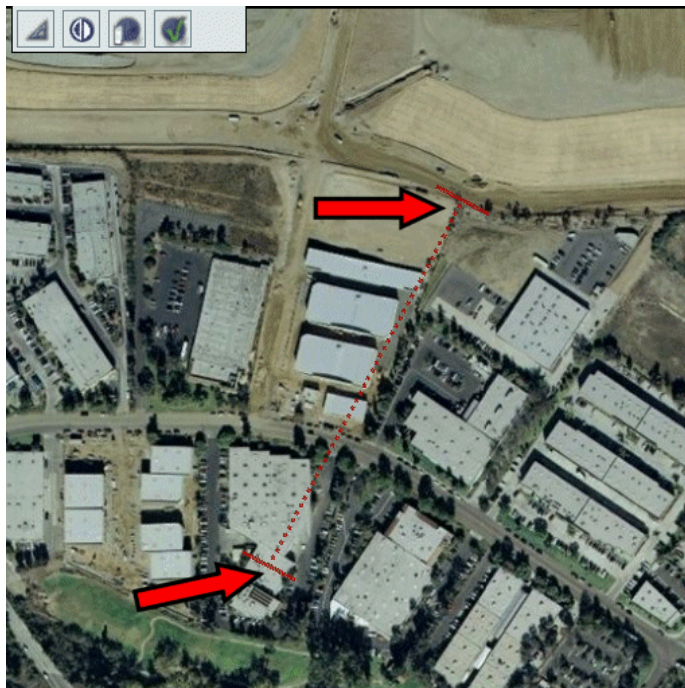
The accuracy of the scale function will depend on the accuracy of the real world measurement. The source of the measurement can be from a survey, laser range finder, online mapping resource, or any other reasonable standard. The key is to find two points you can identify in the background image with a known real distance between them.

⇒ Scale the image *before* adding boundaries and symbols to the map!

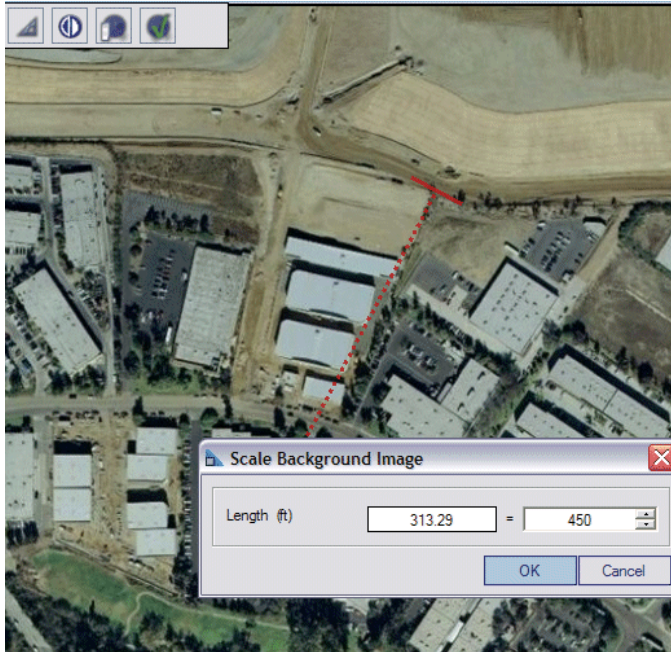
When the image appears in the Map View tab, click the Scale Background Image button.



Click the first known point of the measurement in the map. Move the mouse to the second point. As you move, a line will appear between the first point, and the moving cursor.



Click the second point on the map. The Scale Background Image dialog will appear. Enter the number (feet or meters, depending on your units of measurement selection) that the line represents in the physical world, and click OK.



This will not cause a change in the map's appearance, but the drawing will now know the distances between objects.

If symbols and boundaries were placed on the map before scaling, they will not be scaled! Boundaries will not align after scaling, and symbols may become too small to see. A station symbol that is visible in a map before scaling will be too small to see, if the map is changed to 10 miles or kilometers across. Scale first, draw and place symbols second.

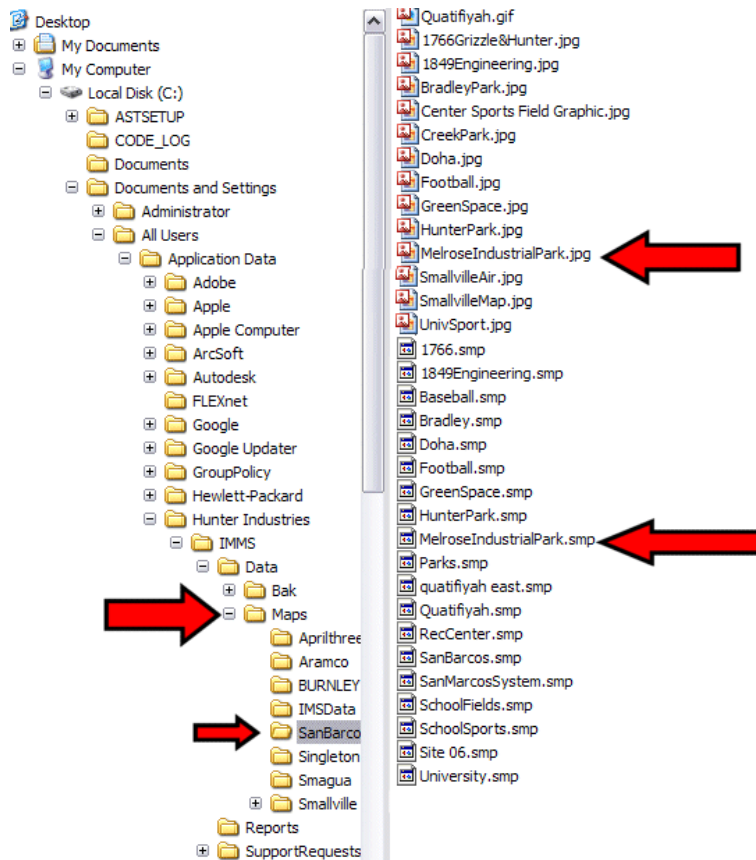
### **Working with Multiple Maps**

IMMS Graphics can be implemented in various degrees. The simplest is to create one large map file, and create boundaries within it to provide local Site and controller control.

This will not work well with systems that span geographically large areas, or when a high level of detail is desired in the background images.

It is therefore possible to add unique maps (with greater detail) for each Site. It is also possible to add a unique map for each Controller, providing the ultimate level of detail for each controller in the system.

- ⇒ When working with multiple maps, a .smp sitemap file is created for each unique map. All of the map files will be in the Maps folder, under the IMMS Data folder.

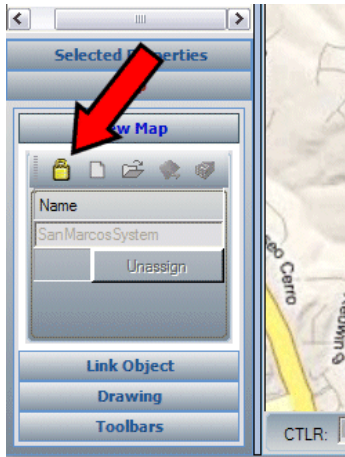


Multiple map levels are used to “zero in” on a certain location. At the System level, the largest map should show all the Sites with Site boundaries.

When a Site boundary is clicked in the System view, IMMS will “jump” to the more detailed Site level in the Map View tab.

When a Controller Boundary is selected from the Site view, IMMS will jump to the Controller map, containing the highest level of detail for just one controller.

Procedure is the same as for the System level map. Click the item in the tree-view first, then open the Map toolbars, in the lower left.



Click the New Map bar. Click the New Map button on the bar. Enter a name for the map (use the Site or Controller name), and click OK.

A new map file will be created, with the new name, followed by .smp. The background will change to a blank gray until an image is imported. Follow the steps under Create a Map to import the new image.

When complete, each Site, and possibly each Controller, will have its own map file.

If using an online mapping resource, this can be accomplished with different zoom levels. Each lower level component (System, Site, and Controller) can have its own map capture for only the area it controls.

### **Adding Boundaries to a Map: Sites and Controllers**

Boundaries are shapes that tell the software which part of the map you are interested in, when clicking them. These are the key objects for using the map for control purposes.

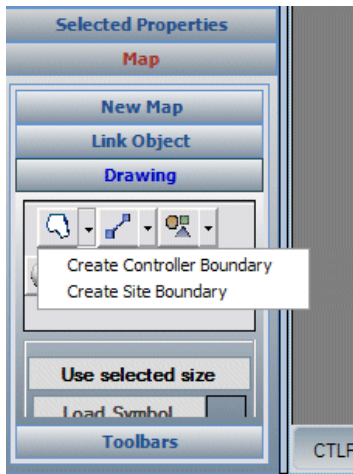
There are two types of boundaries: Site Boundaries (yellow highlight), and Controller Boundaries (green highlight). They each are automatically assigned their own color, so that Site boundaries are always distinct from Controller boundaries.

You will draw the boundaries, and link them to the Site or Controller item that they control.

Do not draw boundaries until the background image has been scaled. Otherwise, you will need to modify, or delete and redraw, the boundaries.

First, click the item in the tree-view that the boundary will identify.

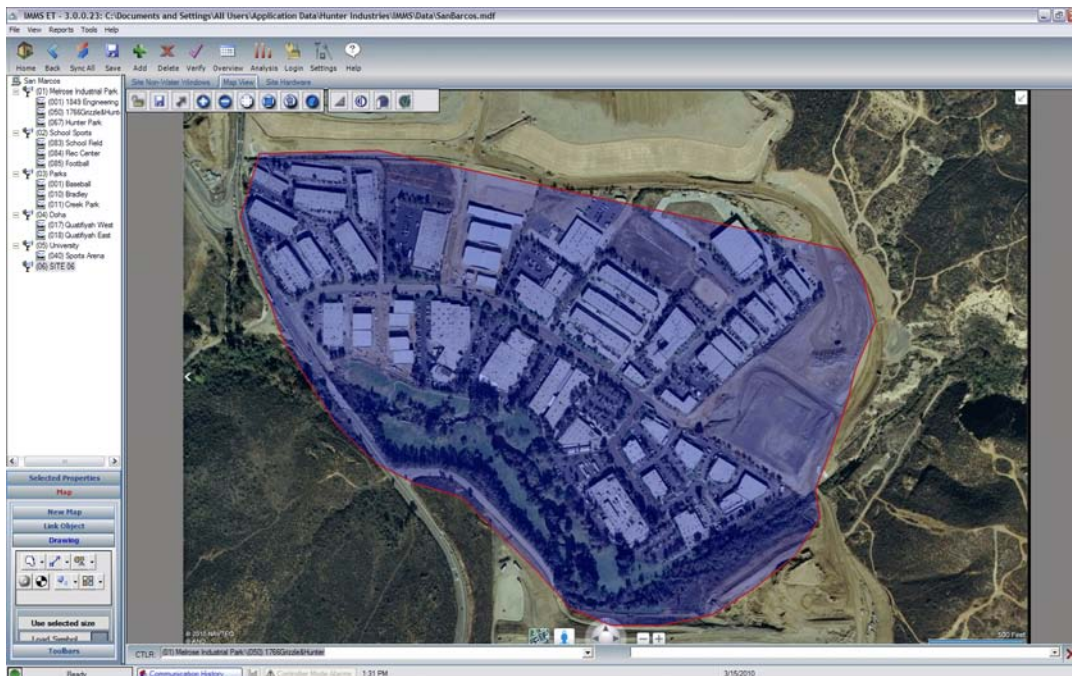
With the graphic padlock unlocked, click the Drawing toolbar in the lower right.



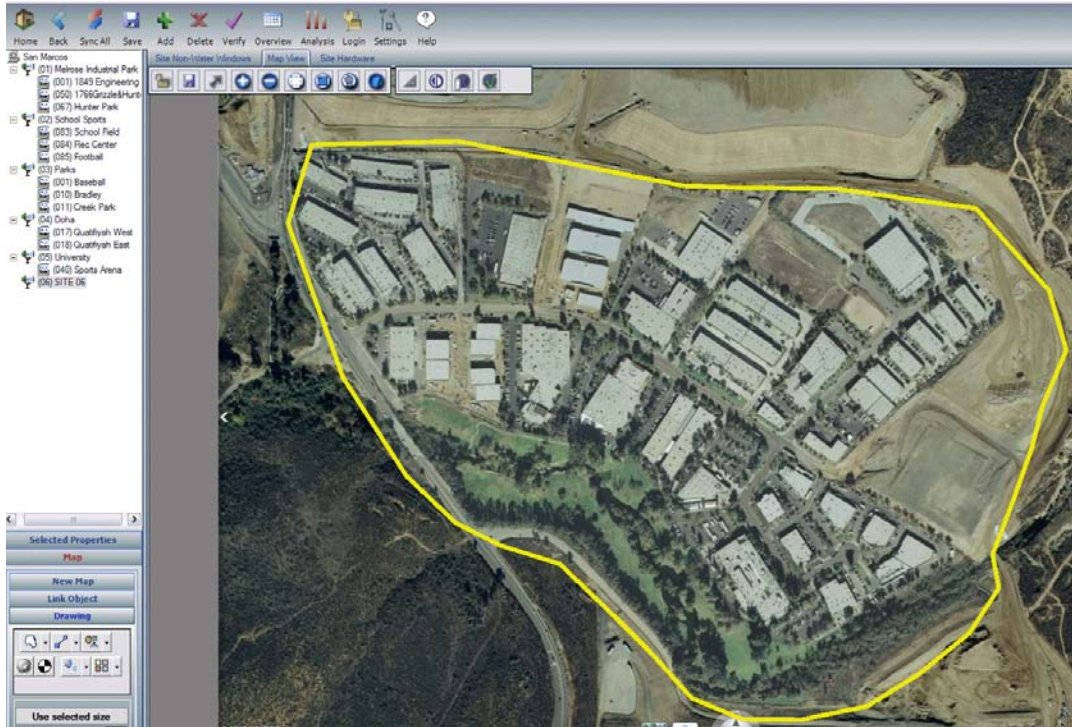
The first object in this toolbar is the Boundary tool. Click the down arrow next to it, to select Create Site Boundary or Create Controller Boundary.

Click the type of boundary to create. From the System level, it is easiest to create the Site boundaries next. For this example, click the Create Site Boundary selection.

Move the cursor to the background image, and click to begin the shape. Move the mouse, and a line will appear. As you click around the perimeter of the area you wish to define, the red line and a shaded fill area will begin to form. Click as many times as you need to form the area.



When you are finished, RIGHT-click to end the shape. The boundary will be complete, and will be automatically linked to the item (Site or Controller) you highlighted in the tree-view.



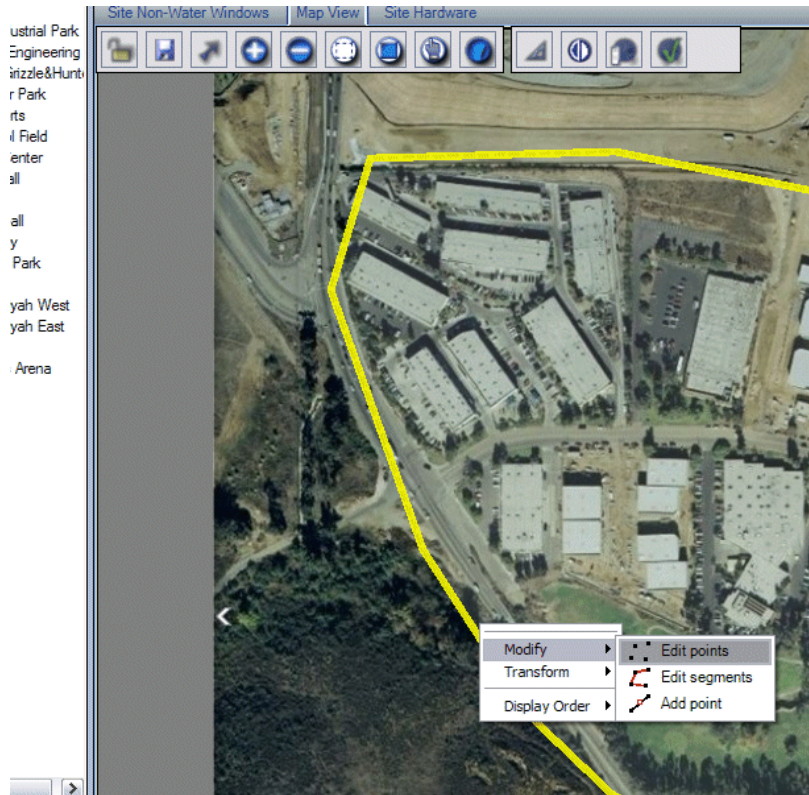
If you did not select an item in the tree view first, IMMS will show a list of objects and allow you to select the one to be represented by the new shape.

### ***Boundary Tips***

Boundaries are not scaled, when the Scale Background Image control is used. Scale backgrounds first, when importing them into the maps.

Boundaries do not need to be 100% accurate. They only need to suggest the general area. It is sometimes better to make the Site boundary a little oversized, so it can be accessed if it is filled with overlapping controller boundaries (see [Overlapping Boundaries](#)).

You can edit boundaries later, if you want to fine tune the shapes. Right-click on any finished boundary and select **Modify** to edit the shape.



Boundary assignments and colors can be edited after they are created. Boundaries can also be deleted.

An item may have more than one boundary assigned. This can be confusing, but some maps may require it. IMMS does not attempt to prevent more than one item per boundary, or more than one boundary per item. This is the operator's responsibility.

### ***Overlapping Boundaries for Site and Controller Views***

Controller boundaries are always placed ON TOP of Site boundaries. This can make selecting the Site difficult, because the controller boundaries are in the way.

There are two solutions for overlapping controller and site boundaries: 1) in Edit mode, make the Site boundary slightly oversized, so that you can click in the area outside the controller boundaries to select the Site, or 2) use the tree-view items for Site level commands.

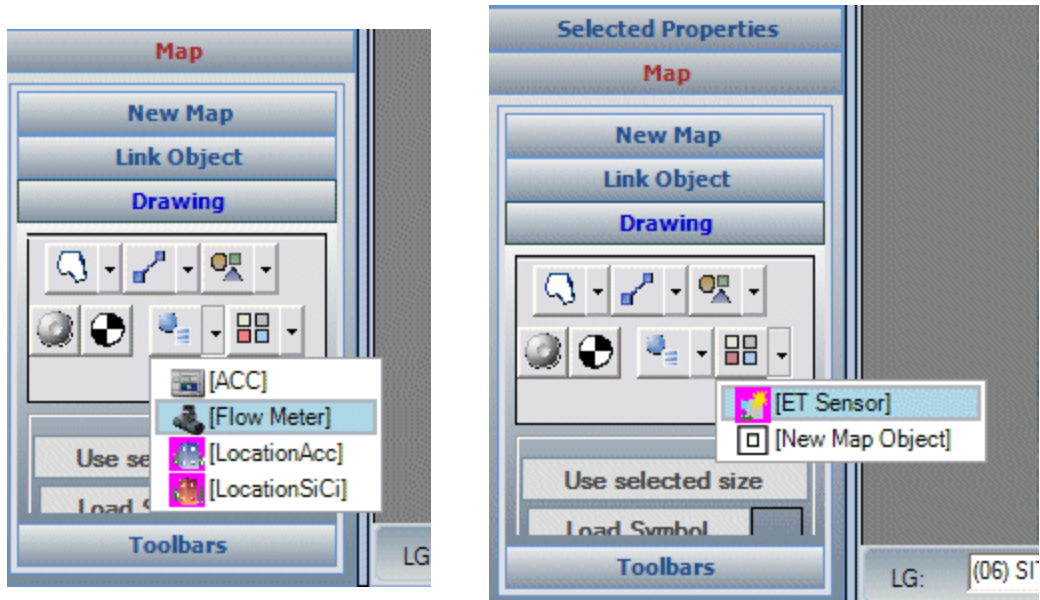
It is not advisable to allow two different controller boundaries to overlap. If two controllers operate valves in the same general area, draw boundaries that do not overlap one another, but both occupy a portion of the irrigated area (like interlocking fingers). Then you will have ready access to either controller's commands. Stations will be uniquely identified for their respective controllers, so station symbol placement in the graphics is a good way to handle these situations.

### **Adding Symbols to a Map**

The most common symbol is the valve icon, representing a single controller station. When this symbol is linked to an actual controller station, it will permit individual station activations.

It is also possible to add icons for individual controllers, or for Sites. When linked, these will have the same operating controls as the controller or Site boundaries.

It is possible to add symbols for other devices, or to draw your own symbols. These types of symbols do not have control characteristics, and are only used as reference points on the map.



The placement of symbols on the map becomes part of the .smp file, which includes these objects and the image on which they have been placed.

### ***Adding Station Symbols***

The best practice for adding station symbols is to create the entire system (including Sites and Controllers) first in the Programming mode, with the Add button. This will define the addresses and number of stations for each controller.

Then, create the map file for a controller. Finally, add symbols for the controller stations by dragging them into the map where they should be placed.

Always create the database first, and then add the graphics.

Note: Station symbols are not required for individual station control. Turn Station On commands already exist in the controller command menus (right click a controller, and select Turn Station On). The graphic only provides a shortcut to the exact station you wish to control, from the map.

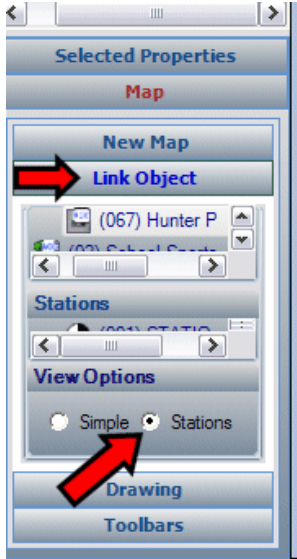
In Edit mode (padlock unlocked), select a controller in the tree-view.



Make sure the map is already scaled for the real world distance, if you plan to do this.

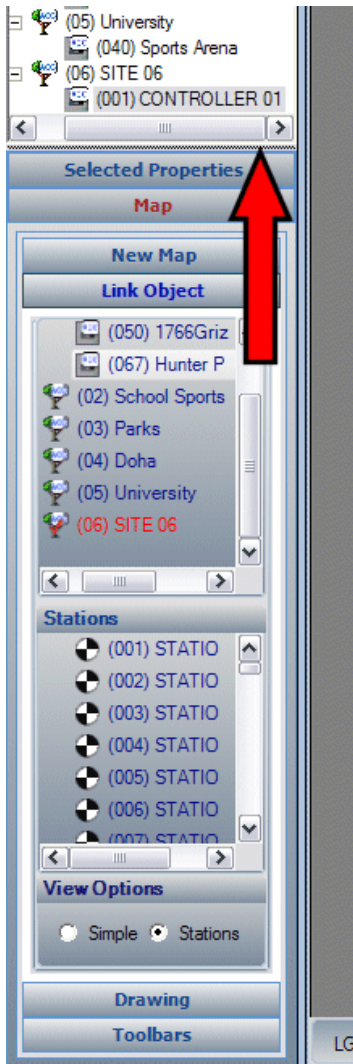
In the lower left corner, click the Map Properties, and then the Links toolbar.

Check the button for Stations in the View Options.

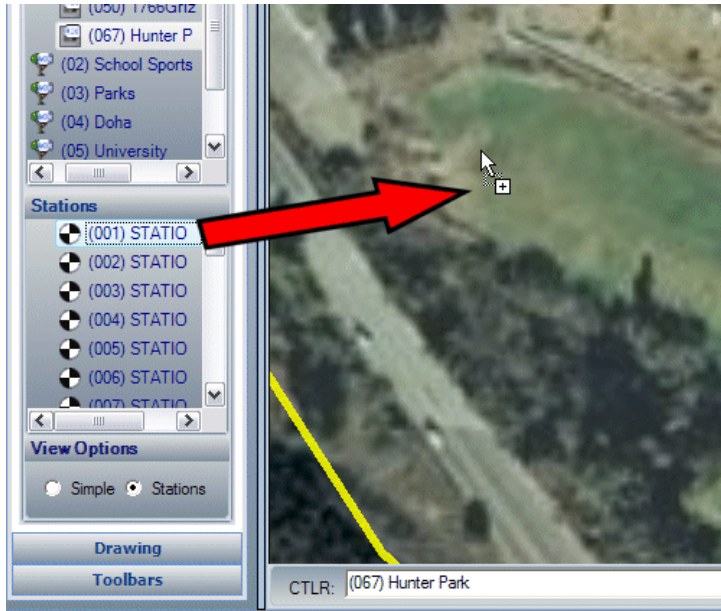


Select the Site, and expand to see the controller. Click the markers next to the Sites to expand the controllers, and click the controller for which you are placing stations. The stations will appear in the window.

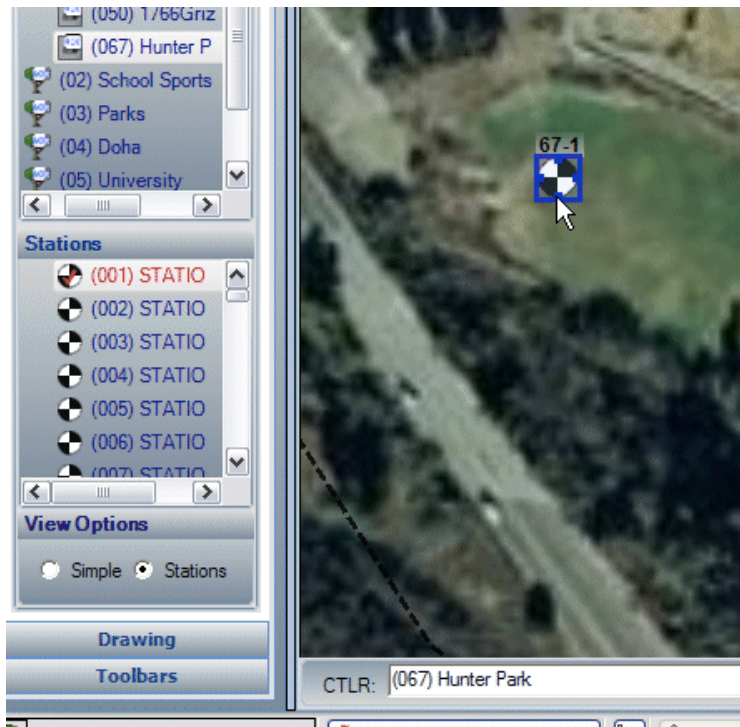
Use your mouse to click and drag the borders for this area to create an adequate workspace. The number of stations shown will equal the station size of the controller in the database.



Click any station and drag it into the map, in the general area where it belongs.



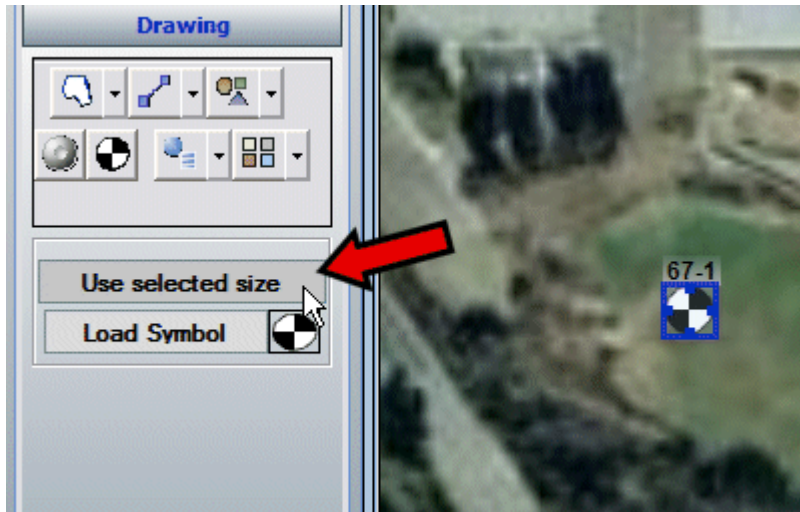
The symbol will appear in the map, along with the label for the controller and station number.



As the stations are assigned to the map, the station label text in the Links tool will turn red. This allows you to keep track of which stations have been assigned, and which have not.

After placing the first station, check the symbol size. You can set the default size for new objects to fit your map scale using the first station.

Zoom the map to Extents, and verify whether the station is visible from the full map view. If not, follow the “Change a Symbol Size” directions to change a symbol size.



It is best to place the first station and adjust its properties (such as size) before placing the rest of the stations, so that each will not have to be adjusted separately.

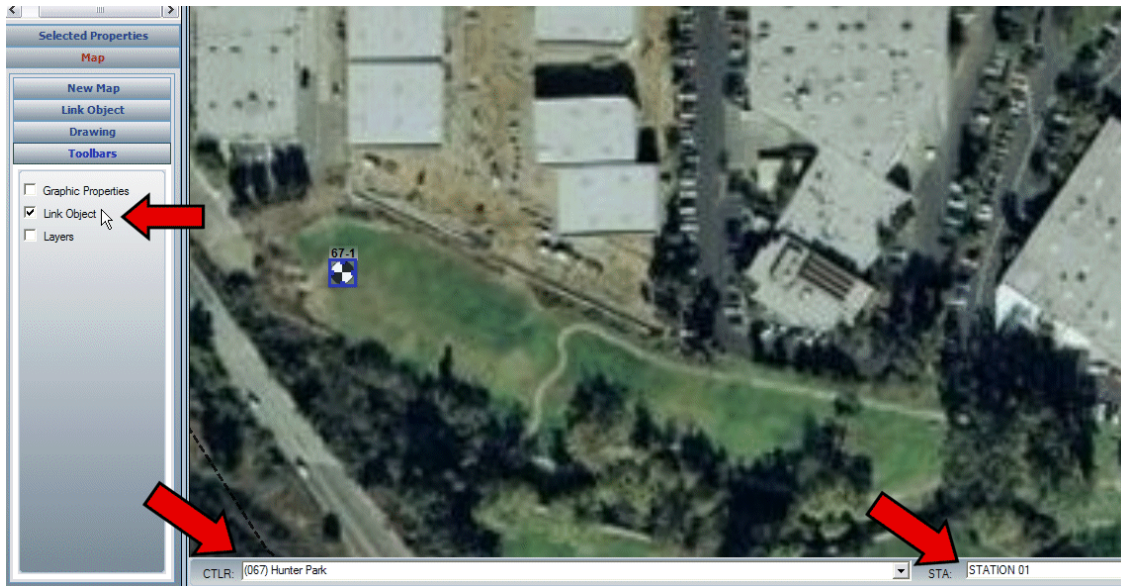
### ***Linking Objects***

A Link is the connection between a symbol or boundary in the map, to a real Site, Controller, or Station in the real world. The Link Object tool set is the fastest and easiest way to assign control properties to symbols.

The best approach is to create Sites, Controllers, and Stations in the database first. Then they will appear automatically in the Link Object tools, and you can simply drag them onto the map where they belong.

Individual object or symbol links can be edited in the Status Bar, if a change is necessary.

Click the toolbar in the lower right for the Toolbars menu. Check the box for Link Object. The linking tool will appear at the bottom of the map view.



Select the linked object in the map that you want to change, and the link will be displayed in one or both of the fields at the bottom. You can use the down arrow next to these fields to change the link for the individual object.

If the item is a controller boundary, the CTRL field will show which controller it represents. If a station object is selected, the CTRL will show the controller, and the STA will show the station number.

Example: If a Station symbol was mistakenly assigned to the wrong controller, select the symbol in the map. Use the down arrow next to controller to select the correct controller, and then use the STA down arrow to select the new station number. Click Save to make the change permanent.

This method works well for changing individual links. It is not recommended for initial setups of large systems (see Adding Station Symbols).

### ***Move a Symbol***

You can move an existing symbol in the map. Select the symbol, and then type M on the keyboard (Move). The symbol will move with the mouse cursor until you click in the new location, and the symbol will be placed at the click point.

### ***Delete a Symbol***

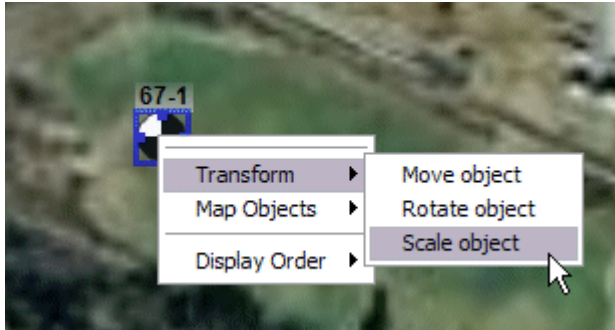
Select a symbol with a mouse click, and press the Delete key on the keyboard. The symbol will be deleted. If it was linked, the link will also be deleted, and the station, controller, or other item represented by the symbol will no longer be represented in the map. It may still be controlled from the tree-view. Only the interactive symbol is deleted.

### ***Change a Symbol Size***

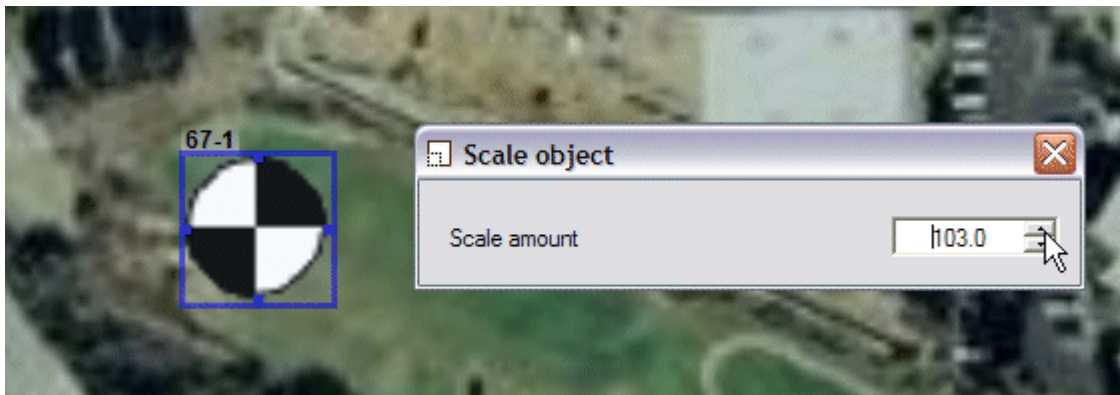
If not in Edit mode, click the padlock to open the drawing.

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Select the symbol to change. Right click on the symbol after it is selected, and a menu will appear.



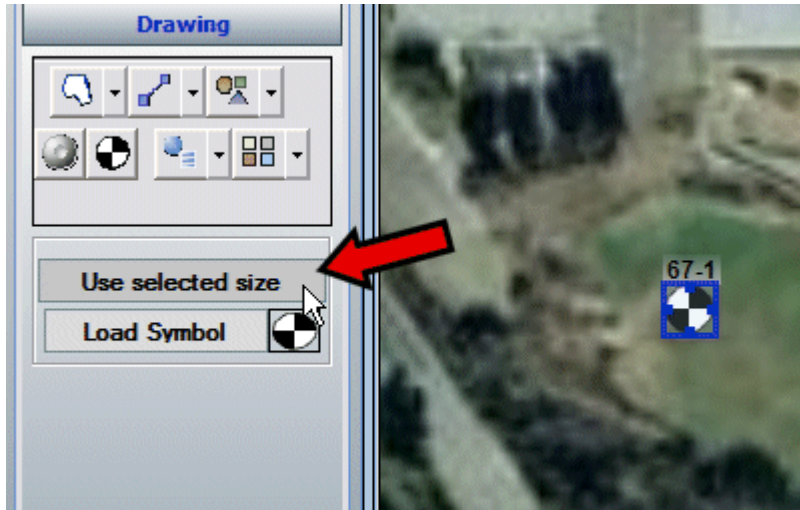
Choose Transform, Scale object. The scale object dialog will appear. Use the spin button (up and down arrows) to increase or decrease the size of the object.



The symbol will change size as you click. The maximum scale factor is 200. The value is a percentage of the original symbol's size. The goal is to create a convenient size for viewing within your map's scale, so that individual stations can be selected, without too much clutter.

When you have found the right size scale for the first station, you can set this scale option to automatically apply to all other stations as they are placed in the map.

Keep the station selected in the map. In the Map Properties tools in the lower left, go to the Drawing toolset and click "Use Selected Size".



This will set the default size for new symbols of that type. As you assign new stations to the map, they will all be of the new size that you have selected.

The default size can be changed again. In a multi-map system, different maps may be set to very different scales. If you switch to a map (for example, for a different Site), you can place the first station, scale it to a better size for visibility, and click Use Selected Size again. Then you can assign the symbols to the new map and they will all appear in the new size.

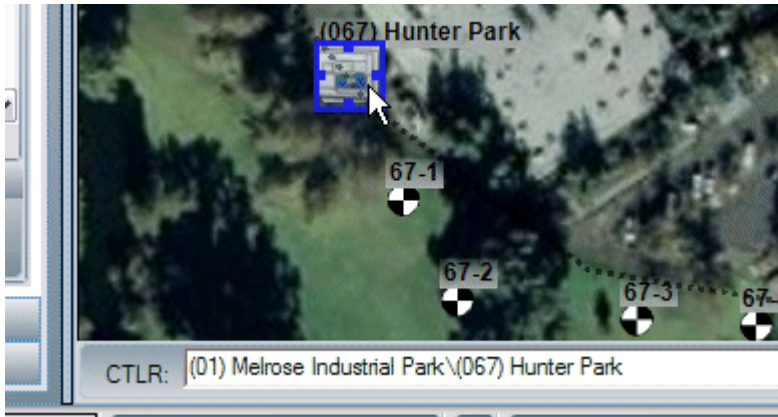
### ***Adding Site and Controller Symbols***

You can add symbols for the Sites and Controllers, just like adding stations. The Site and Controller symbols will have exactly the same functions as the Site and Controller boundaries. It is not necessary to have both, but it is possible.

Boundaries define the area that the Site or Controller controls. You might also want a controller icon placed exactly where the controller is installed in the map, as a physical record of the controller's location.

In the Links toolbar, you can drag the Controller or Site symbols on to the map and place them just like stations. After they have been placed, you can also right click and choose Transform, Scale, to size them for best visibility on any particular map.

By dragging them from the Links window to the map, they will be automatically linked to the proper controller.



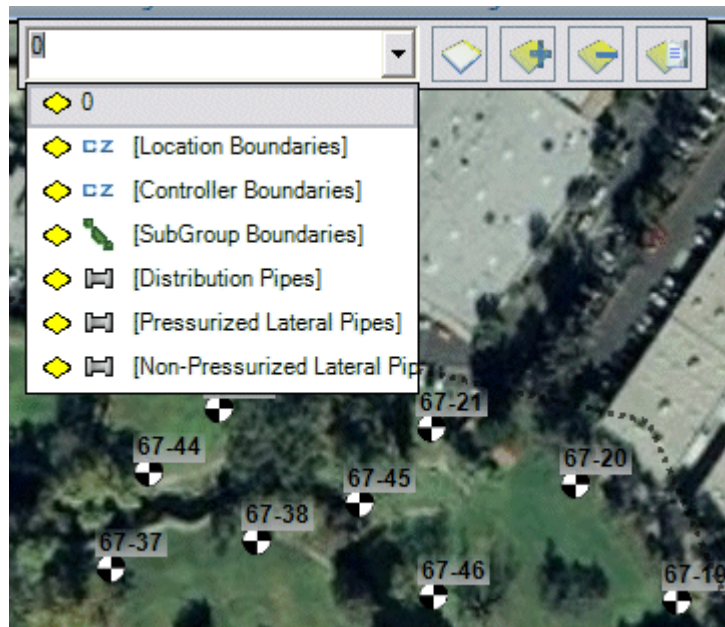
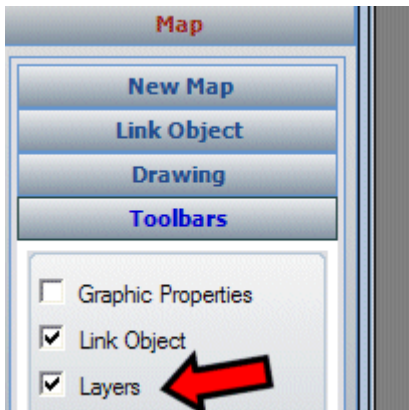
If the boundary for the controller has already been created and linked, this may be difficult or impossible without using the Layer tool. Sometimes the map will not let you place a controller symbol into the same area as the controller boundary.

### ***Turning Layers Off and On***

IMMS Graphics include multiple layers. Most objects are placed on layer "0", including stations.

Site Boundaries are always placed on the Location Boundaries layer. Controller Boundaries are always placed on the Controller Boundaries layer. This cannot be changed or edited. However, these layers can be turned off, and back on, to make some drawing tasks easier.

Turn on the Layer toolbar. Make sure the drawing is in Edit mode (unlocked). Use the Toolbars tool in the lower left corner of the screen, and check the box for Layers.

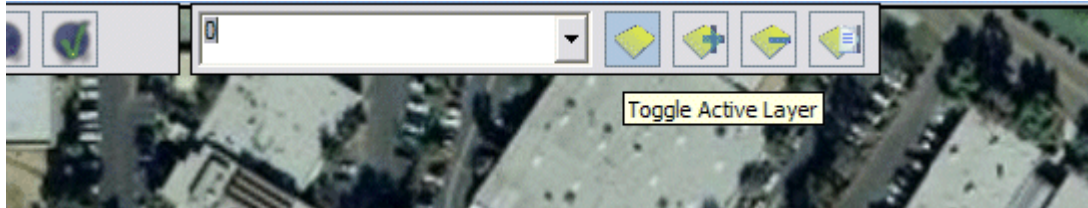




Controller boundaries are always automatically placed on the Controller Boundaries layer.

Click the down arrow next to the active layer (usually this is layer 0), and select the Controller Boundaries layer. This will make it the active layer.

Then, click Toggle Active Layer button next to the Layer selection window. This will turn the visible boundaries off.



This will now allow you to drag a linked controller symbol into the map, and place it wherever it needs to be, even inside of a Controller Boundary.

Click the Toggle Active Layer button again to make the boundaries visible. You should now have two different links to the same controller, one from the boundary, and one from the controller symbol itself. Either one will show all controller commands when in the operating mode. The controller symbol may be placed in the image, exactly where it is located in the real world.

### ***More about Layers***

Layers are common in CAD based programs. They work like a set of transparencies, where each layer contains only certain types of drawing symbols.

IMMS works with 3 main layers: 0, for stations and most other symbols, Location Boundaries for Site boundaries, and Controller Boundaries for controller boundaries.

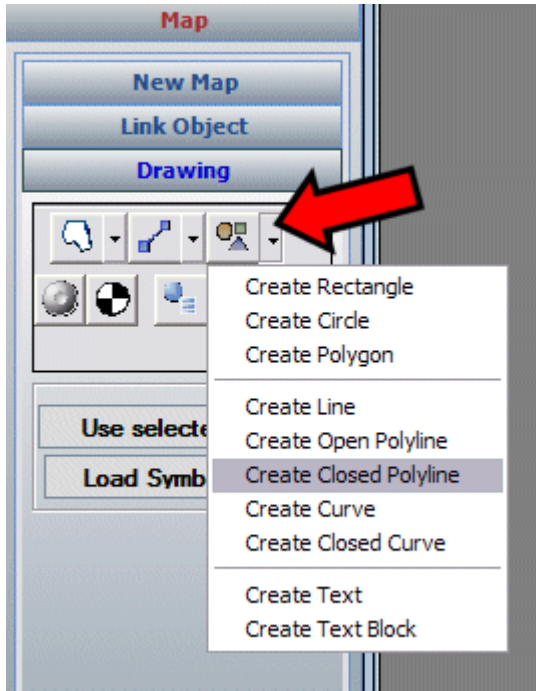
IMMS includes some other pre-packaged layers, and has the option to create new layers. These are not used for control purposes, but they may be used to illustrate other types of hardware. They can be used to document pipe locations, etc. They can also be used to create more elaborate vector based illustrations.

A full discussion of layer and drawing capabilities is beyond the scope of the operating manual, but persons familiar with CAD programs should have little difficulty understanding these features. They are not required, and not commonly used, for irrigation control purposes. For specific questions on advanced Layer capabilities, please contact Hunter or review advanced training materials as they become available.

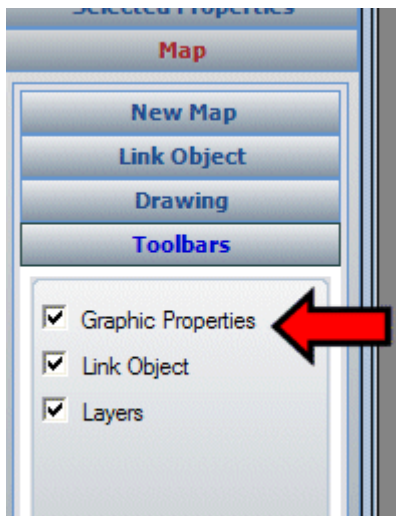
### ***Create Custom Symbols***

IMMS allows you to create custom symbols with vector drawing tools and place them in the program library. They can then be placed in the maps for reference (although they will not have any control functions).

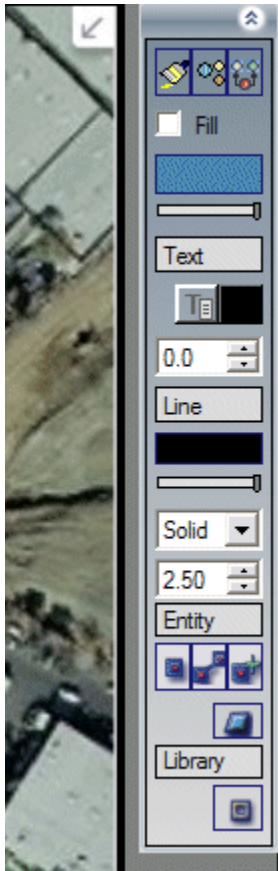
The Drawing tools include “primitive” shapes, such as lines, curves, and polygons.



These can be used, along with the Graphic Properties tools, to create custom graphics for decoration, or to create custom symbols to represent items of interest.



Select any object you have created, and use the Properties editor to change the line, fill, colors, and transparency.



One or more custom shapes can be saved under a unique name to the Symbol Library.

Click the shapes to be saved (if you wish to combine multiple shapes into one object, select them all while holding the Shift key), and then right click, Select Map Objects, Add Selection to Library.

IMMS will prompt you for a name, and a category, for the new object. Once this is saved, it is available to place in the map like any other graphical object.

A full discussion of advanced drawing capabilities is beyond the scope of the operating manual. They are not required, and not commonly used, for irrigation control purposes. For specific questions on advanced drawing options, please contact Hunter or review advanced training materials as they become available.

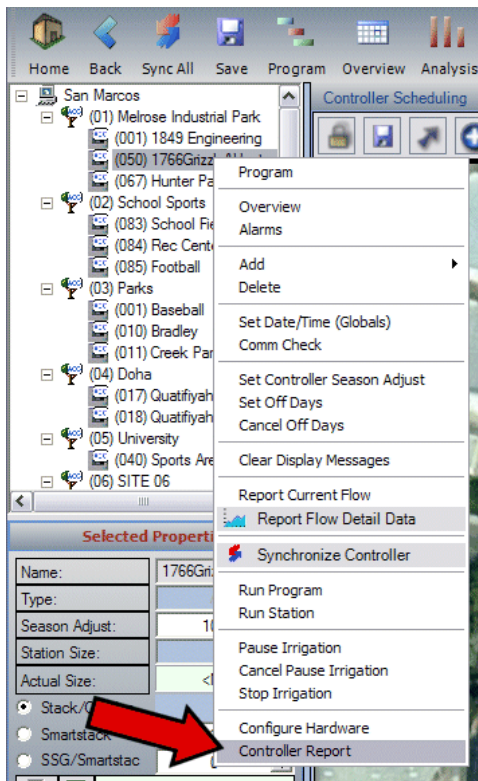
## Reports

IMMS has several types of reports, including graphical summaries such as the calendar Overview and the Analysis graph, as well as text reports suitable for export.

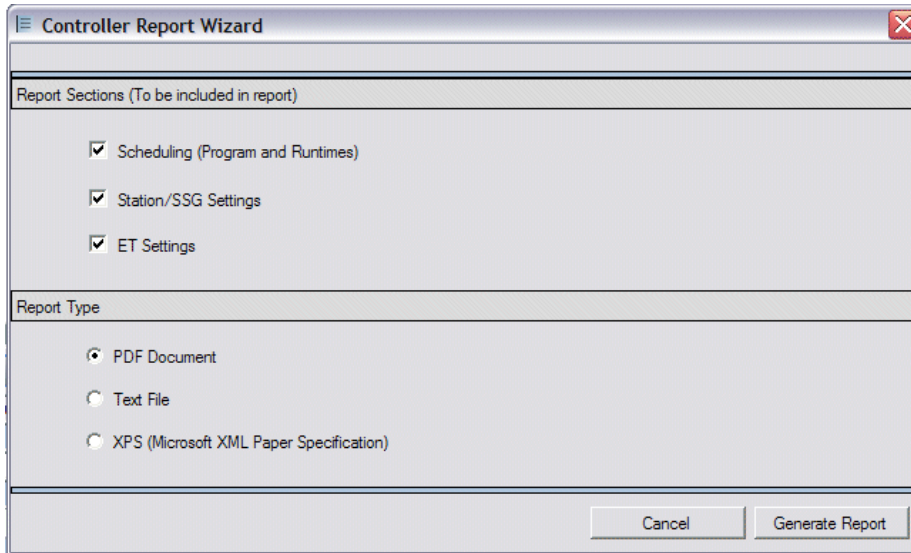
### Controller Report

The Controller Report is relatively new and is a response to requests from users to document the settings of individual controllers.

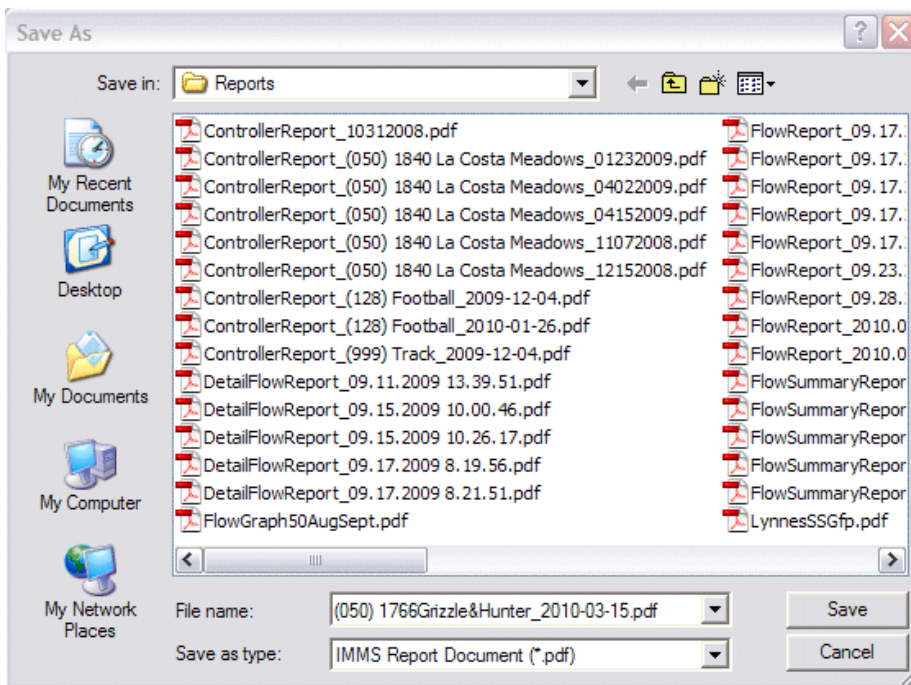
Right-click on any controller in the tree-view, and locate Controller Report in the drop-down menu of functions.



The Controller Report Wizard allows you to select which data you want to include in the report.



The Generate Report function allows you to choose a different name or destination for the report. The default will always be to the Reports folder in the IMMS Application Data.



The report lays out all data for any controller setup, including current irrigation programming and ET settings, if applicable. This may be saved or used for records.

### Scheduling

Station Name	PROGRAM A	PROGRAM B	PROGRAM C	PROGRAM D	PROGRAM E	PROGRAM F	Cycle	Soak
(01) STATION 01	0:15:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(02) STATION 02	0:15:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(03) STATION 03	0:15:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(04) STATION 04	0:15:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(05) STATION 05	0:00:00	0:30:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(06) STATION 06	0:00:00	0:30:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(07) STATION 07	0:00:00	0:30:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(08) STATION 08	0:00:00	0:30:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(09) STATION 09	0:00:00	0:00:00	1:30:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(10) STATION 10	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(11) STATION 11	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00
(12) STATION 12	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:00	0:00

Schedules						
Programs	PROGRAM A (A)	PROGRAM B (B)	PROGRAM C (C)	PROGRAM D (D)	PROGRAM E (E)	PROGRAM F (F)
Days	Su M T W Th F S	M T W Th F S	M W F	M F	NONE	NONE
Next Water	3/15/2010	3/15/2010	3/15/2010	3/15/2010	NONE	NONE
ET Mode	NO	NO	NO	NO	NO	NO
Season Adjust	100%	100%	100%	100%	100%	100%
Start Mode	Override	Override	Override	Override	Override	Override
Station Delay	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Starts	0:00:00 AM	0:00:00 AM	4:00:00 AM	0:00:00 AM	OFF	OFF

### Station/SGG Data

#	Name	MFT	WFT	Cycle (H:MM)	Soak (H:MM)	Flow	Flow Designation	Flow Units	Flow Limit %	Alerts	Delay (min:sec)
01	STATION 01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
02	STATION 02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
03	STATION 03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
04	STATION 04	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
05	STATION 05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
06	STATION 06	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
07	STATION 07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
08	STATION 08	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
09	STATION 09	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
10	STATION 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
11	STATION 11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	
12	STATION 12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0:00	0:00	0:00	Use Flow	GPM	115	100	

Name	Cycle	Soak	Cycle/Soak Mode	Flow
01	0:00	0:00	Manual	0:00
02	0:00	0:00	Manual	0:00
03	0:00	0:00	Manual	0:00
04	0:00	0:00	Manual	0:00
05	0:00	0:00	Manual	0:00
06	0:00	0:00	Manual	0:00
07	0:00	0:00	Manual	0:00
08	0:00	0:00	Manual	0:00
09	0:00	0:00	Manual	0:00
10	0:00	0:00	Manual	0:00
11	0:00	0:00	Manual	0:00
12	0:00	0:00	Manual	0:00
13	0:00	0:00	Manual	0:00
14	0:00	0:00	Manual	0:00
15	0:00	0:00	Manual	0:00
16	0:00	0:00	Manual	0:00
17	0:00	0:00	Manual	0:00
18	0:00	0:00	Manual	0:00
19	0:00	0:00	Manual	0:00
20	0:00	0:00	Manual	0:00

### ET Settings

Name	Program	Dep %	Deficit (in)	ET Pkg %	Cycle	Soak	Cycle/Soak Mode	Pest Type	Maturity	Slope %	Soil	Sun	Sprinkler	Prelop (in)
(01) STATION 01	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(02) STATION 02	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(03) STATION 03	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(04) STATION 04	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(05) STATION 05	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(06) STATION 06	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(07) STATION 07	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(08) STATION 08	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0
(09) STATION 09	Not Assigned	10.0	0.1	100	0:00	0:00	Manual	FULL_ET	Established	0	Loam	Full Sun	Spring	1.0

## Irrigation Summary

From the menu bar at the top of IMMS, click Reports to select one of the printable spreadsheet summaries.



The irrigation summary report displays printable, detailed irrigation events for selected controllers and sites.

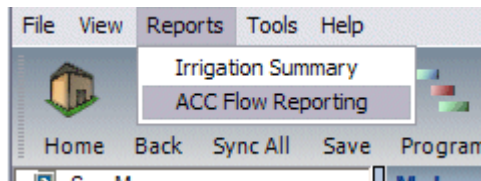
Any site, controller, or collection of controllers can be designated with the checkbox selections, and displayed by clicking the Update Overview button. No results are displayed until boxes are checked and the update button is clicked.

Site	Controller	Station	Start Date	Start Time	End Time	Run Time (HH:MM)	Description
Special Event Notes	----	----	6/2/2006	----	----	----	Note
(01) San Marcos	(02) 1766 La Cost...	----	8/21/2006	6:45:00 AM	8:15:00 PM	----	Daily
(02) ICC Site	(01) ICC on Anoth...	----	9/26/2006	3:42:00 PM	5:04:00 PM	----	Once
(01) San Marcos	(01) 1960 Diamond	----	2/26/2007	1:53:00 PM	9:53:00 PM	----	Daily
(01) San Marcos	(050) 1960 Diamond	(01) Darrell	3/7/2007	12:05:04 AM	12:10:04 AM	0:05	Lawns
(050) 1960 Diamond	(01) 1960 Diamond	(01) Darrell	3/7/2007	12:32:16 AM	12:37:16 AM	0:05	Lawns
(01) San Marcos	(050) 1960 Diamond	(01) Darrell	3/7/2007	12:57:20 AM	1:02:20 AM	0:05	Lawns
(050) 1960 Diamond	(01) 1960 Diamond	(01) Darrell	3/7/2007	2:05:04 AM	2:10:04 AM	0:05	Lawns
(01) San Marcos	(050) 1960 Diamond	(01) Darrell	3/7/2007	2:32:16 AM	2:37:16 AM	0:05	Lawns
(050) 1960 Diamond	(01) 1960 Diamond	(01) Darrell	3/7/2007	2:57:20 AM	3:02:20 AM	0:05	Lawns

The filter buttons at the top left of the screen can be used to customize the report to show only certain types of events: Watering, Alarms, Notes, and Non Water Windows. These can be used to focus the report on certain types of information.

## ACC Flow History Report

The ACC Flow History report produces an updated report of actual flow, at your specified level of detail.



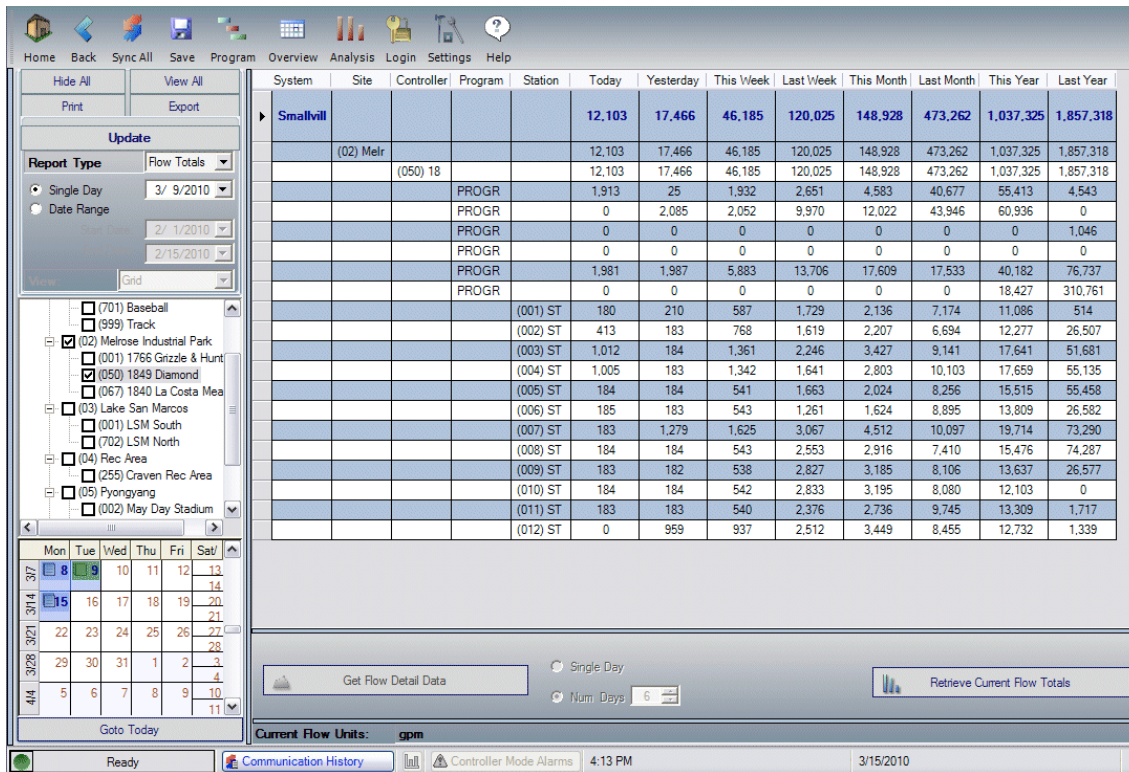
Any ACC site, ACC controller, or collection of ACC controllers can be designated with the checkbox selections, and displayed by clicking the Update Overview button. No results are displayed until boxes are checked and the update button is clicked.

## Types of ACC Flow Reports

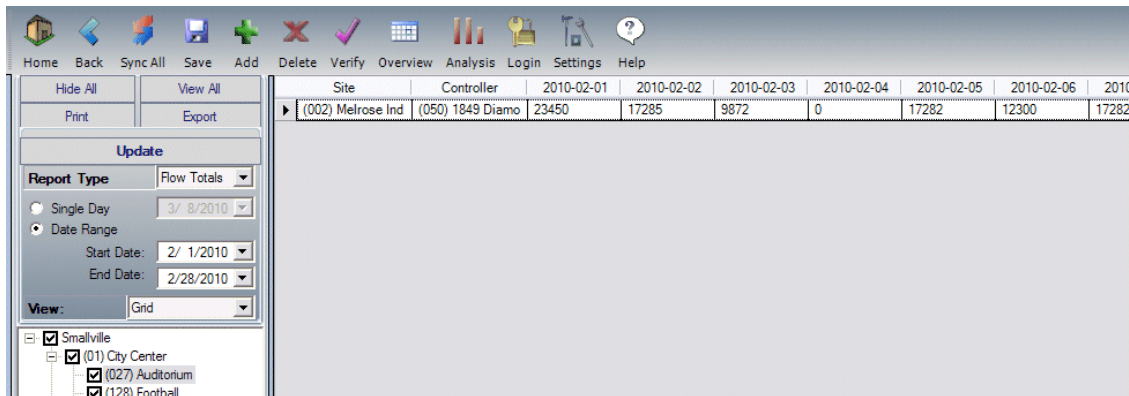
There are two different types of ACC flow reports. Either can be shown by single day, or by date range. Either can be shown as a grid, or as a chart.

Flow Totals – Single Day or Date Range. Flow totals are daily amounts for preset periods (week to date, last week, etc.). Last week stays the same all week, until it is displaced by the next week's total, and so forth. The total for any given day becomes the historical total for that date, which does not change once it is stored.

Flow Totals can only be shown as a grid for a single day, and automatically break down flows to station level.

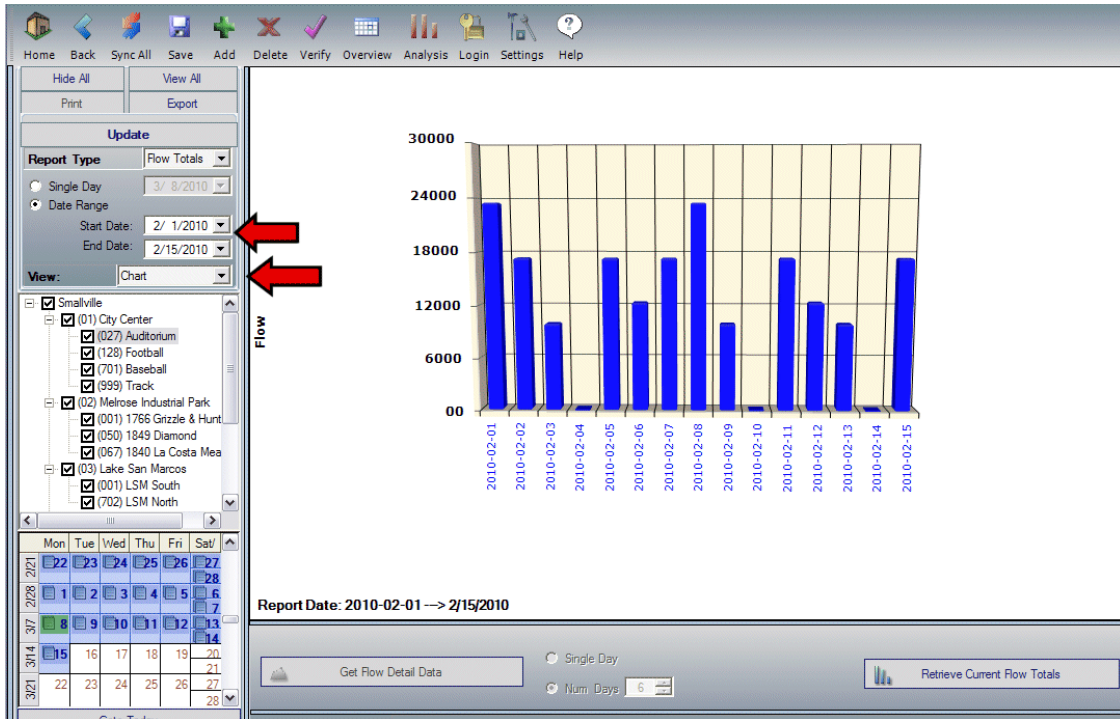


Flow Totals are shown as either a grid or a graph for a date range (more than one day). However, the grid will only show controller level totals when a range is selected, and would show a single row for each controller.

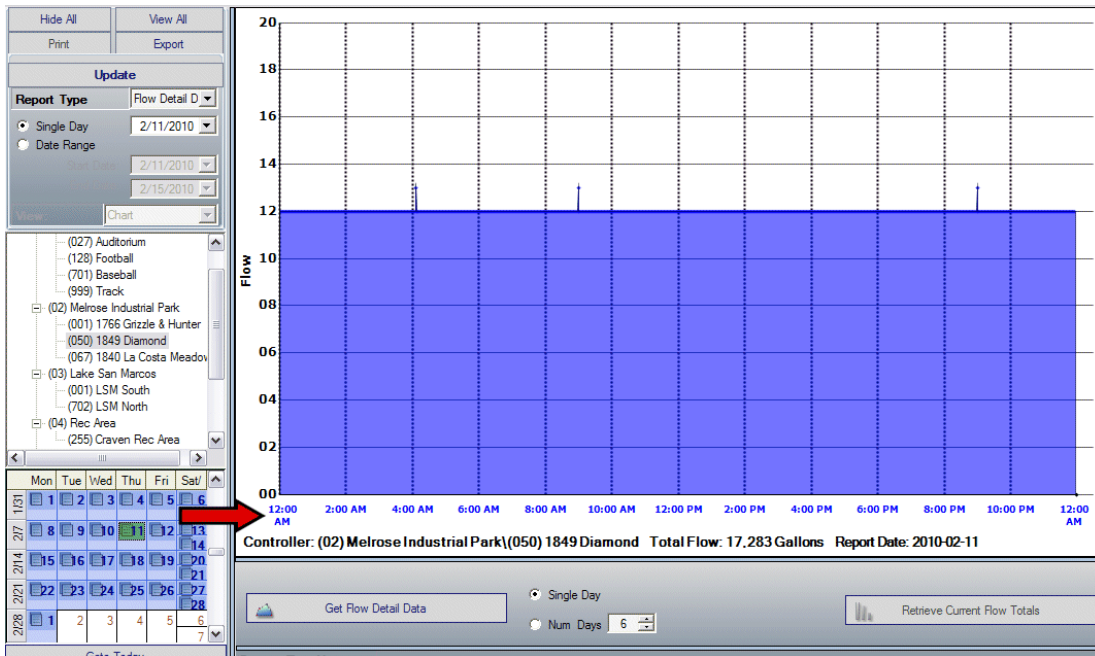


When a chart is selected for a date range, Flow Totals will show daily totals as a column graph.





Flow Detail Data – Single Day or Date Range. Flow Detail data is only available within a given selected day (a 24 hour period). This can graph the minute-by-minute flow activity within a given day.



When a date range is selected, this report simply shows daily flow totals, like the Flow Totals report.

The reports may be exported into several common formats, including Excel (.xls) and Adobe PDF.

Flow Totals and Details are both now retrieved automatically on every Synchronization. It is not necessary to retrieve them manually, unless communications have been interrupted for a period of time.

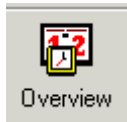
If no flow has been retrieved from the controllers yet, you will need to click the Retrieve Current Flow Totals in the lower right corner to get data to display. This will initiate communications with the selected controllers to update the totals. In recent versions, flow totals are updated automatically at Synchronization.

You can also Retrieve Flow Totals at any time from the menu commands to get the most up to date information.

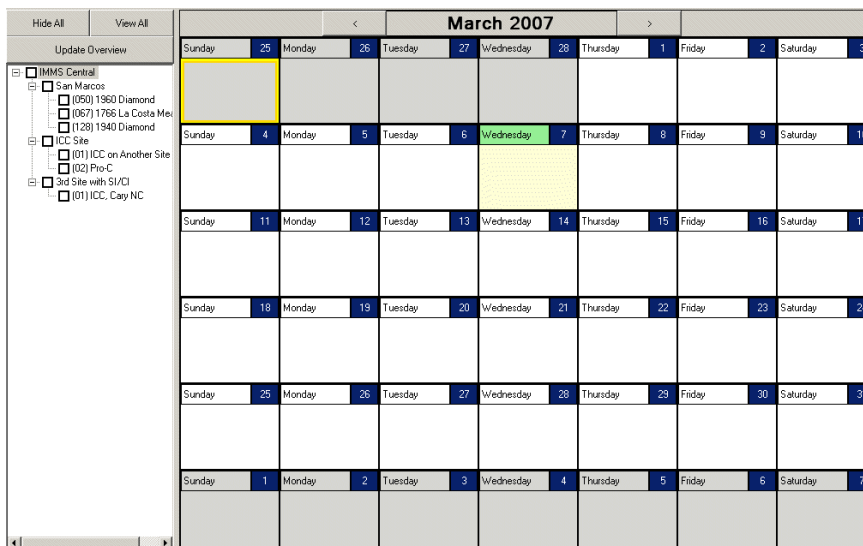
## Overview

The calendar-based Overview function allows views of future events, as determined by the current schedules, as well as alarm histories, Notes, and Non Water Windows.

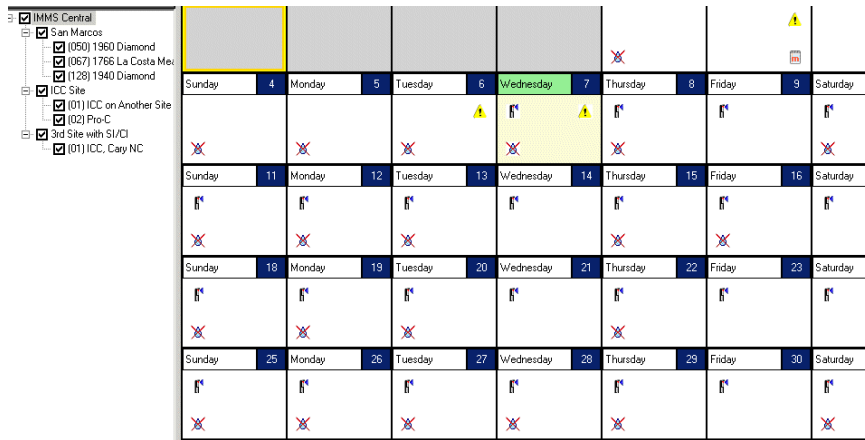
The Overview is accessed from the icon button at the top of the screen.



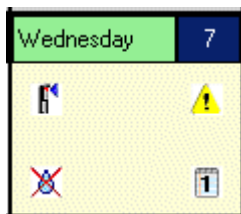
The calendar will display events for any site, controller, or collection of controllers with the checkbox selections, and then clicking the Update Overview button.



No results are displayed until boxes are checked and the update button is clicked.



This shows events for each day of the selected month, for the checked Sites and controllers. On each day, any icons are interactive.



Double-click the sprinkler icon for a printable list of irrigation events. If flow has been learned for stations, the estimated flow for calendar events is based on the run times scheduled for the stations.

Irrigation Event Summary								
Report Date:		3/7/2007						
Site	Controller	Station	Date	Start Time	Duration	Program	Total Flow	Flow Uj
San Marcos	1960 Diamond	Darrell	3/7/2007	12:05 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	12:32 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	12:57 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	2:05 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	2:32 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	2:57 AM	0:05	Lawns	40	gpm
San Marcos	1940 Diamond	Station 01	3/7/2007	3:15 AM	0:15	Groundcovers	15	gpm
ICC Site	Pro-C	Lawn 1	3/7/2007	3:16 AM	0:16	Program A	0	gpm
ICC Site	ICC on Another Site	Lawns	3/7/2007	4:12 AM	0:12	Program A	0	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	11:19 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	11:46 AM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Darrell	3/7/2007	12:11 PM	0:05	Lawns	40	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	12:16 AM	0:11	Lawns	88	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	12:40 AM	0:04	Lawns	32	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	2:16 AM	0:11	Lawns	88	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	2:40 AM	0:04	Lawns	32	gpm
ICC Site	Pro-C	Lawn 2	3/7/2007	3:25 AM	0:09	Program A	0	gpm
San Marcos	1940 Diamond	Station 02	3/7/2007	3:30 AM	0:15	Groundcovers	15	gpm
ICC Site	ICC on Another Site	Back Yard	3/7/2007	4:24 AM	0:12	Program A	0	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	11:30 AM	0:11	Lawns	88	gpm
San Marcos	1960 Diamond	Micah	3/7/2007	11:54 AM	0:04	Lawns	32	gpm

Total Events: 81    Total Flow: 3822    Gallons    Print    OK

Double-click the Non Water Window icon for a printable list of non-water windows.

Non Water Window Summary						
Report Date:		3/7/2007				
Level	Name	Start Time	End Time	Repeat	Notes	
ACC Program	Flowers&Such	1:53 PM	9:53 PM	Daily	p;oiuipou	

Total Non Water Windows:

Double-click the Alarm triangle for alarm events.

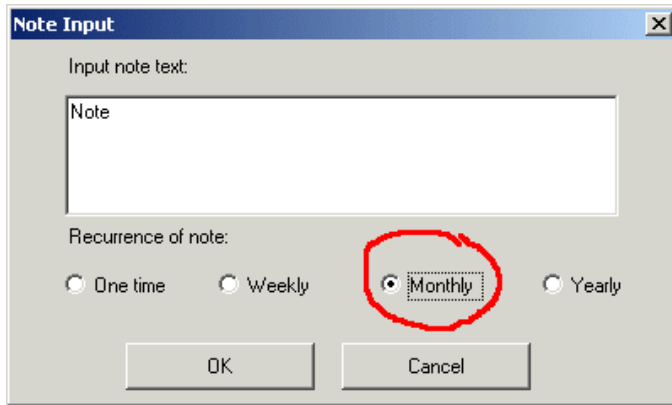
Alarm Summary						
Report Date:		3/7/2007				
Site	Controller	Start Time	Response	Description	Reason	Mode
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:15:03 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:15:07 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:15:18 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:20 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:40 AM	----	Missed Irrigation	Underflow	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:41 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:45 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:48 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:52 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:16:55 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:17:05 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:05 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:26 AM	----	Missed Irrigation	Underflow	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:27 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:31 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:34 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:38 AM	----	Station Fault	Communication	No Stations Runnin
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:41 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:18:51 AM	----	Station Fault	Communication	Auto Program Moc
(01) San Marcos	(01) 1766 La Costa ...	3/7/2007 6:19:51 AM	----	Station Fault	Communication	Auto Program Moc

Total Alarms:

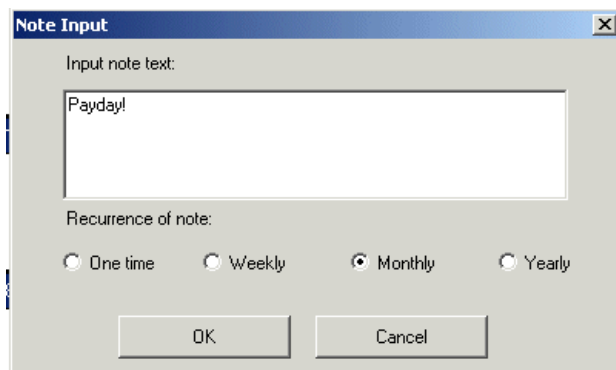
Double click the Note icon to read any notes for the day. Notes do not “pop up” automatically on a selected day. When you see the Notes icon on the calendar, double click to read the Note.

Note Summary		
Report Date:		3/7/2007
Date Created	Type	Notes
3/7/2007 7:40:35 AM	Once	Fertilizer applications today.

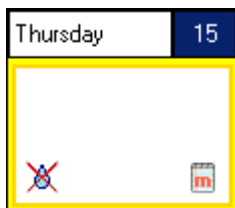
The Note function only exists in the calendar Overview. To create a Note, double-click in the blank space on any calendar day. A Note Input window will appear.



Notes can recur on a regular basis, or appear only one time. Type text in the note field and click OK.



The note will appear as an icon on the calendar day as a reminder. If the note has an “m”, it is a monthly note. A “1” indicates a one-time event, “w” is weekly, and “y” is yearly.

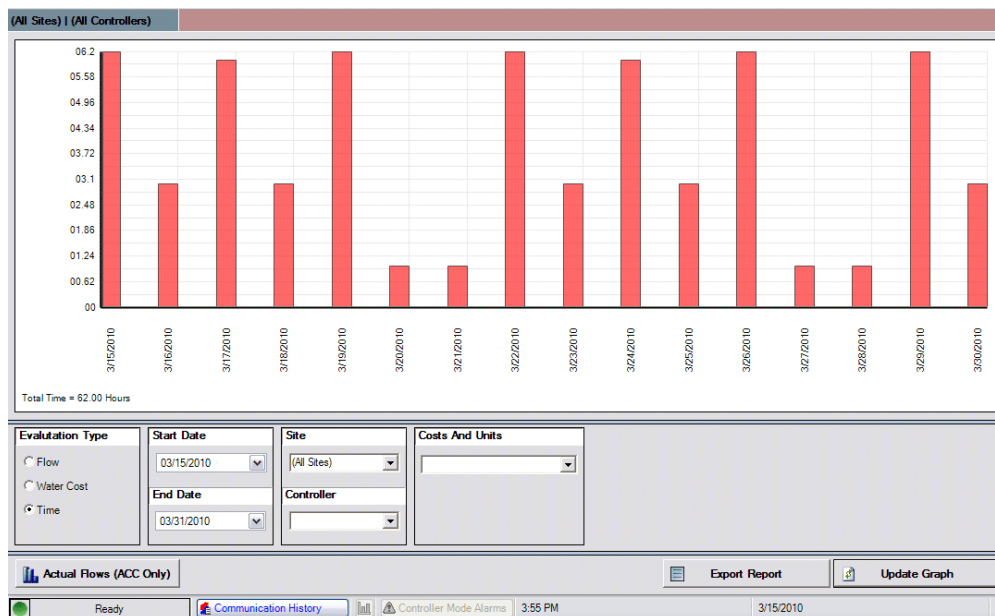
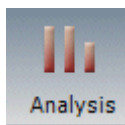


## Analysis

The Analysis graph is intended for estimating flow, based on the current irrigation schedule, and is mainly intended for use with non-ACC controllers (ICC, Pro-C, and SRC using SI/CI interfaces).

This graphs estimated future consumption and is not “actual” flow. It allows estimating total time, gallons or liters, and cost, for a given schedule.

IMMS Help Manual



ACC controllers have actual flow reporting, which report actual flow in the ACC Flow Reporting menu.

## Saving & Using Databases

IMMS has the ability to save and open different databases with different names.

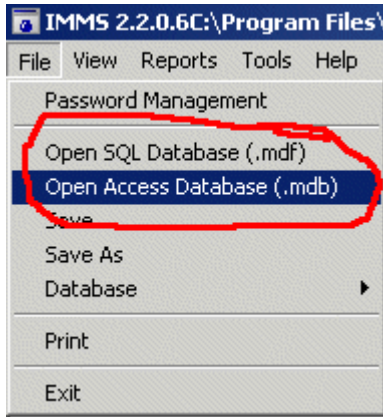
Within limits, this means you can save different scenarios for different conditions. If the condition re-occurs frequently (like Summer, Overseeding, etc.) you can reload that database and change all system settings to the irrigation scenario that works best.

It is important to Save any time you have made changes to the system, or they will not take effect. The easiest way to save is to click the Save button on the toolbar.

## Database Types

IMMS 1, and early versions of IMMS, used the Microsoft Access database format. These files are displayed with “.mdb” after the file name.

IMMS 2.2.0.0 or later began using Microsoft Sequel Server, and the SQL database format. These files are displayed with “.mdf” after the file name.

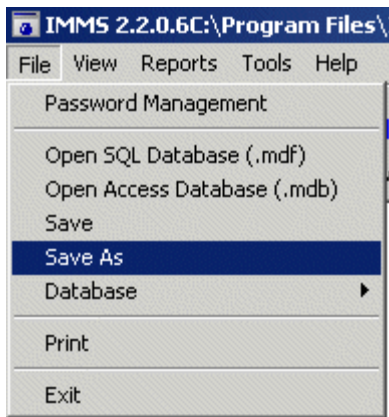


The later versions of IMMS 2 can open any earlier .mdb file (they may take a little longer to open, as they are converted).

When you save one of these earlier files in IMMS, they will be converted to .mdf format. The original .mdb file will be kept in original condition, but any new information you have saved will be in the .mdf file.

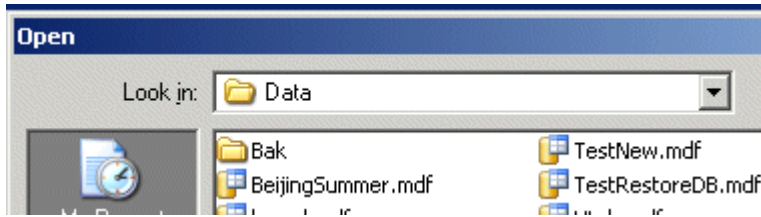
### Save As

Click File, and choose Save As from the drop-down menu that appears.



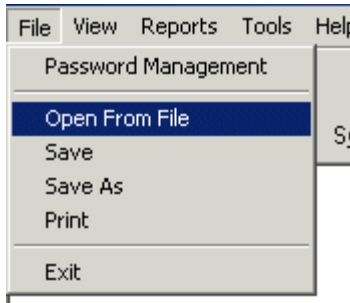
This allows you to save the settings under a different name. **IMMS can open any IMMS database with any name**, unlike earlier versions that always looked for the single file name “IMSdB.mdb”.

The strategy for saving different scenarios is to start with a database containing all sites and controllers, make all the changes necessary for the new condition, and then choose the Save As function. This allows you to save the changes under the new name, leaving your old database intact.

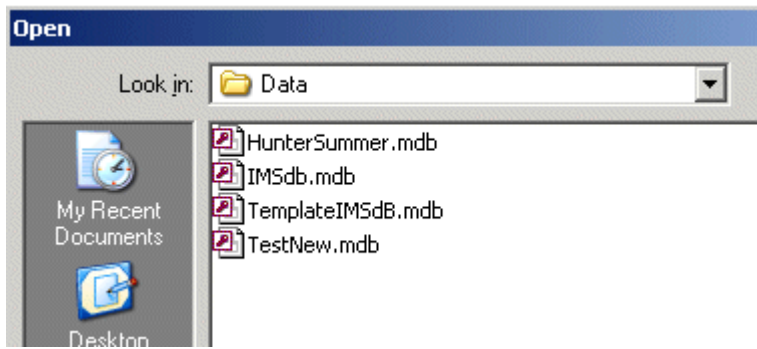


Then, exit the database you were in, but DO NOT SAVE.

Reopen IMMS and click File, Open.



Select the new database.



The database will open and the saved settings will be ready for download (or further changes).

**IMPORTANT:** A saved database is frozen in time, from the last Save.

If new hardware (such as an additional controller, additional stations in a controller, or new sites) has been added since that Save, the saved database will not know anything about it. You will need to add the new hardware to the database before it can recognize and communicate with the new devices.

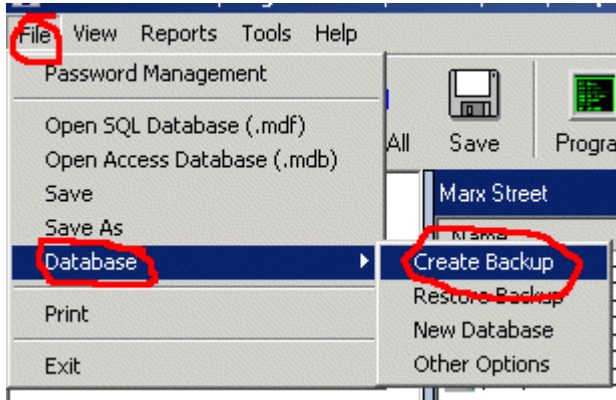
Software errors and questions can often be solved by emailing Hunter tech support the database file that is having the problem.

## Backup the Database



Backups of your data are important when databases are lost or corrupted.

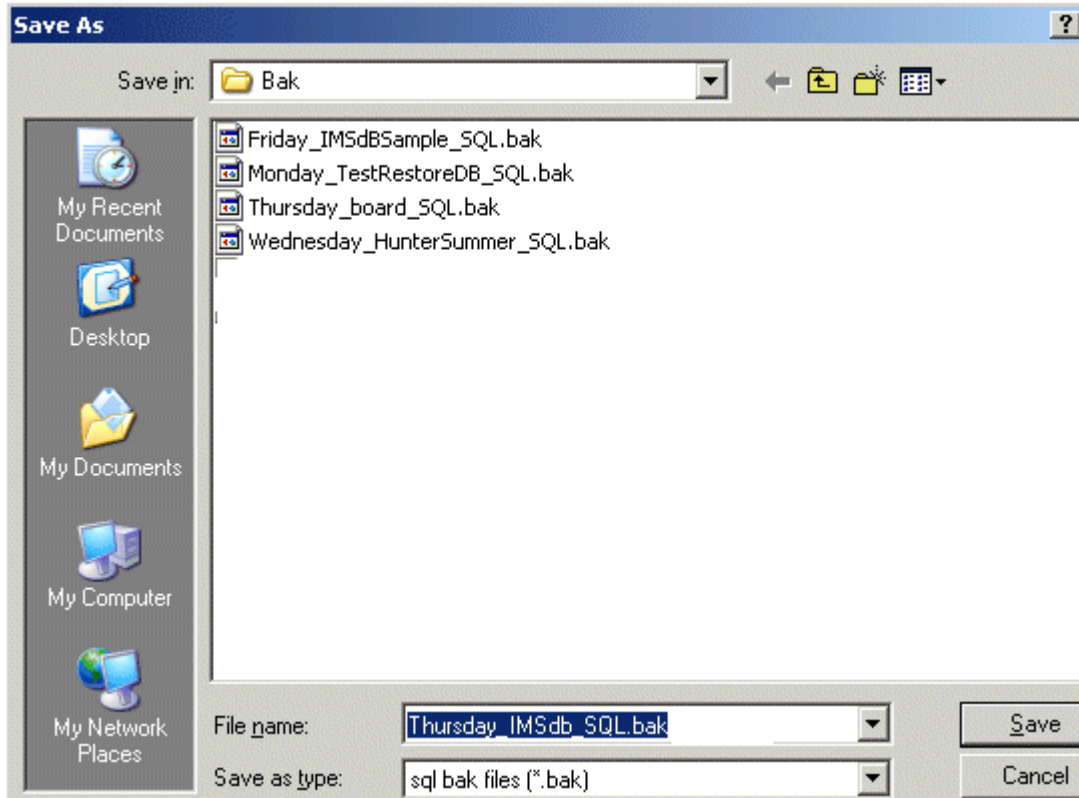
IMMS may automatically create backup files of the active database and name them for the day of the week. You can also create a backup at any time from IMMS 2 under the File menu.



Make your own backup whenever you have made a large number of changes, or added new Sites and Controllers to the system.

Copy the backup to a CD or flash drive, label, and keep in a safe place outside the computer. Computers can crash, be stolen, or have other hardware problems, and a good backup will save a great deal of work if the system needs to be re-created for one of these reasons.

IMMS backups are special files with a “.bak” file format. They are automatically stored in the “BAK” folder under IMMS 2 in your computer’s directory.



The Bak folder contains all of your backups. Automatic backups occur at 5 AM (if your computer is running at that hour) and are automatically named for the day of week, followed by the file name for the database.

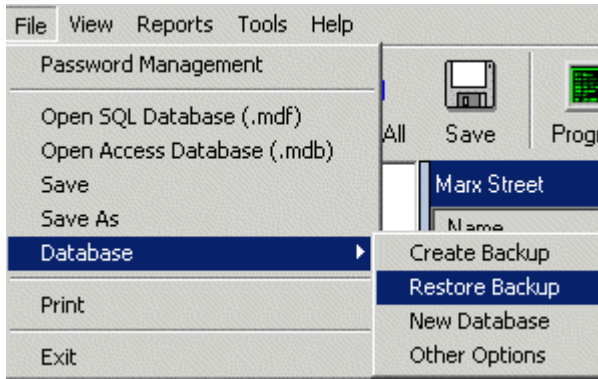
To prevent the file from growing too large, there are never more than 7 automatic file backups. Every Monday, for example, a new Monday bak replaces the previous one. If a problem is found in your database, you can restore a bak from before the event happened, by selecting any of the days or one of your manually created Baks.

If you choose to make a backup from the File menu, you can type any name you like for the bak file.

Click Save after you have named the backup.

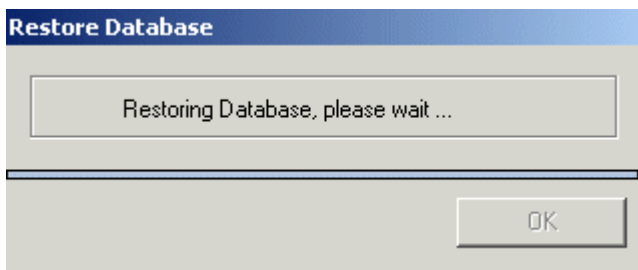
### Restore from a Backup

If you need to restore a database from a Bak file, click the File menu and go to Database, Restore Backup.



This is the same as the Backup procedure in reverse. Select the .bak file you want to restore from the list, and click Open.

A progress bar will show the restore as it occurs.

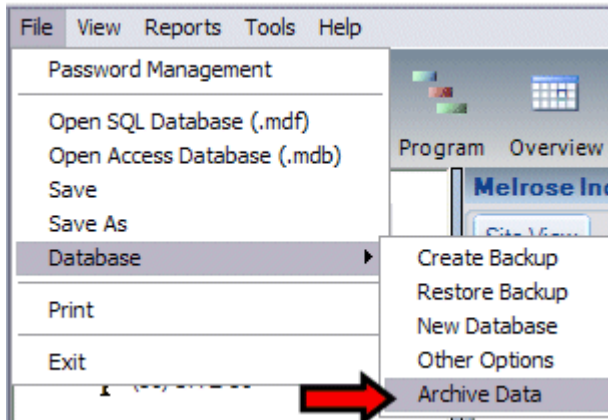


This will return the database to the condition it was in at the time of the original backup. Any edits since that time will not be saved.

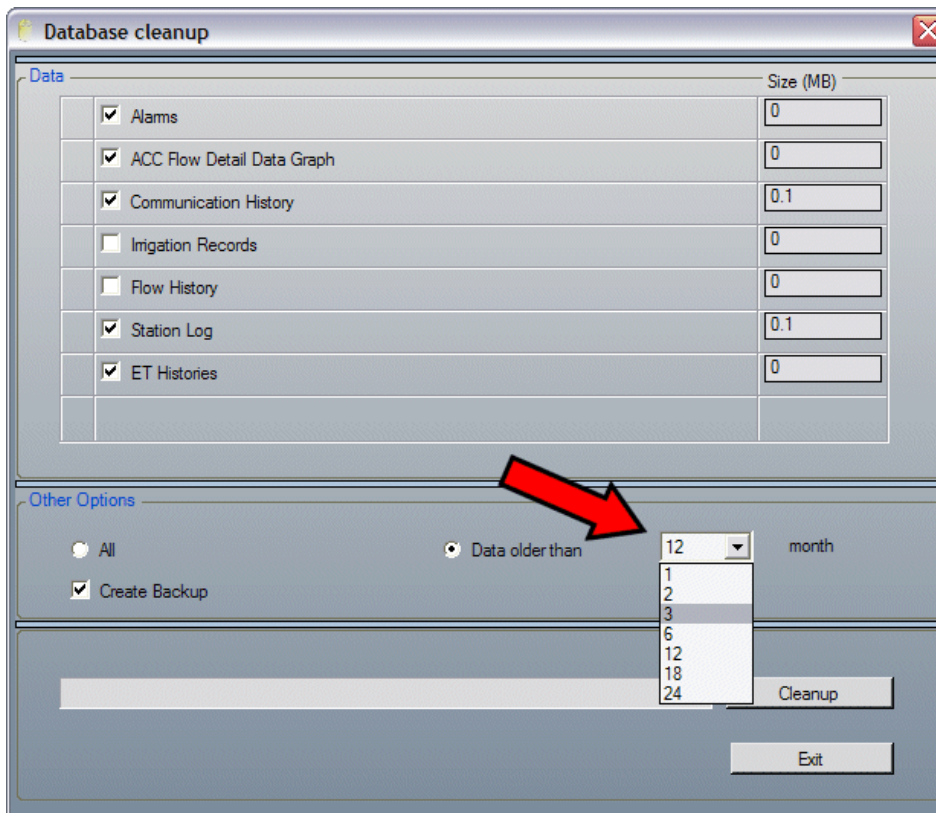
### **Archive Data (Reduce Database Size)**

It is possible for IMMS databases to grow very large. IMMS tends to track and record virtually all activity. Over time, the database can grow and impact computer performance.

If IMMS determines that the database is too large, an Archive Data button will appear at the bottom of the screen. You can either click the button, or at any time you can reach the same function from the Database menu.



This will open the database cleanup utility. The records are shown by type, and the size of each group of records is shown in megabytes (Mb).



You can select which records to purge, and which to keep. You can also select how far back to archive.

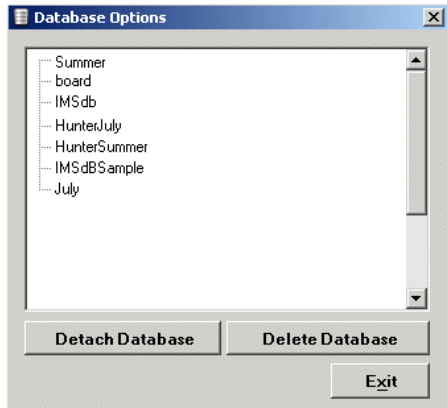
Generally, you can delete Communication History older than a month, unless you are documenting ongoing communications issues. These will take up a lot of room in a busy system. The station log may also occupy a large amount of memory, and the information is not valuable after 30 days or more.

Select the types of information you wish to purge, and the age of data you want to target. Click the cleanup button to start the process.

Cleanup can take several minutes. A very large database may be cleaned up in smaller stages. Purge the selected items older than 12 months, and allow it to complete this task. Then select items older than 6 months, and Cleanup again. Repeat until the database is a manageable size.

### Advanced Database Tools

The Database, Other Options selection has the ability to detach and/or delete whole databases. IMMS operators should never have to perform these operations under normal circumstances, but the feature is there for advanced technical support purposes.



Sequel Server “attaches” the active database when it is in use.

A database cannot be deleted or copied while it is attached. Choosing a database, and then clicking the Detach button, breaks this connection and allows you to delete or copy the file (without creating a bak file).

This is not required for Bak files and is not normally necessary.

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