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# **Designer 2013 Guide**

**Cityworks<sup>®</sup>**

**By Azteca Systems Inc.**

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# Table of Contents

<b>Introduction.....</b>	<b>1</b>
Designer Functions.....	1
Using Designer for the First Time.....	2
Basic Functionality .....	3
Tools.....	3
Cityworks Designer Menu .....	4
Navigation Tree .....	5
Buttons .....	6
Keywords .....	7
Multiple Selections .....	7
Resizing.....	7
Sorting .....	7
Date Fields .....	8
Tabbing Sequence .....	8
Field Value Tables.....	8
Importing Data .....	11
Setting up Data Trees .....	13
Additional Database Information .....	17
Inactive or Cancelled Information .....	17
<b>Administration .....</b>	<b>19</b>
Cityworks DBA .....	19
Cityworks Domains.....	20
Domain Administrator Role .....	23
Storeroom Domains .....	25
Dig-Smart Stake Domains.....	27
Password.....	28
Adding Password to Designer.....	28
Encrypting a Password .....	29
Employees.....	30
Employees Tab .....	31
Skills Tab.....	38
Assign Cost Codes Tab .....	40
Load Employees Tab .....	43
Inactive Employee Search Tab .....	44
Desktop Event Layers Tab .....	46
<b>Cityworks Setup.....</b>	<b>50</b>
Domain Groups.....	51
Employees.....	53
Request Templates .....	53
Request Hierarchy Tab .....	54

Request General Tab.....	55
Questions Tab .....	60
Answers Tab.....	60
Map Layers Tab .....	63
Security Tab .....	63
WO Templates Tab .....	65
Cloning a Request Template .....	66
General Info Tab.....	66
Work Order Templates .....	68
Work Order General Tab.....	68
Tasks Tab.....	75
Labor Tab.....	78
Materials Tab.....	81
Equipment Tab .....	84
Misc. Info Tab.....	87
Printing Tab.....	88
Security Tab .....	89
Budget Plan Tab .....	91
Inspections Tab .....	97
Cloning Work Order Templates .....	98
Custom Field Templates .....	99
Deactivating a Custom Field Category .....	105
Contractors.....	105
Equipment.....	111
Materials .....	115
Materials Hierarchy Tab.....	115
Search Stock on Hand Tab.....	128
Tasks .....	131
Tasks Hierarchy Tab.....	131
Task Edit Window .....	132
Permits.....	134
Custom Inspection Templates.....	135
Condition Score .....	136
Templates Tab.....	137
Observations Tab.....	139
Results Tab .....	140
Server Panel Configuration Tab.....	142
Security Tab .....	143
Inspection Custom Observations .....	144
Predefined Comments .....	145
Template Security .....	146
Employee Relates.....	149
Work Order Template Classes .....	151

Classes Tab .....	152
Rule Sets Tab .....	153
Load Tab.....	153
<b>Asset Setup .....</b>	<b>155</b>
Asset Group Definitions .....	156
Define Groups Tab .....	156
Assign Assets Tab .....	158
Field Configuration Tab .....	159
Relationships Tab.....	162
Asset Form Configuration .....	163
Asset Inspection Configuration.....	167
Inspection Field Mapping.....	170
Isolation Trace Configuration .....	171
Asset Reading.....	172
Actions Tab .....	173
Additional Configuration Tab.....	176
Readings Tab.....	177
Geodatabase Sync .....	178
<b>Storeroom .....</b>	<b>183</b>
Storeroom Domain Groups .....	184
Groups Tab.....	184
Group Rights Tab.....	185
<b>Server Setup .....</b>	<b>188</b>
Cityworks Database Manager .....	188
Additional Server Configuration.....	190
Contract Line Items.....	191
Audit Settings .....	194
GIS Services .....	195
Asset Edit Fields in Inspection.....	197
GIS Attribute Updates .....	198
User Settings .....	200
Login Manager.....	202
Equipment Changeout.....	204
Attachment Mappings.....	205
<b>Others .....</b>	<b>207</b>
Units of Measure.....	208
Codes.....	209
Add/Modify Tab .....	209
Import Tab .....	212
CCTV Tab .....	213
Cost Codes Tab.....	214
Job Codes Tab .....	215

Custom Data Fields .....	216
Preferences .....	217
Preferences General Tab .....	217
Email Settings Tab .....	226
Holidays Tab.....	230
I/I Quantity Matrix for Smoke Testing .....	231
Map Layers and Fields .....	233
Customer Accounts .....	234
Edit/Add Customer Account Tab.....	234
Import Customer Accounts Tab.....	237
Import Street Names Tab .....	239
CU Material Groups .....	242
Groups Tab.....	242
Materials Tab.....	242
Macro Manager .....	243
Record Lock.....	245
Other System Codes.....	246
<b>Cityworks Data Template.....</b>	<b>249</b>
Logging into the Database.....	249
Menu Options .....	251
Load Cityworks Table .....	252
Import From Data Sheet.....	253
Export To Data Sheet.....	255
Clear Worksheet .....	256
Update Cityworks Record(s).....	256
Delete Cityworks Record(s).....	259
Inserting New Data .....	261
Cityworks Custom Data Fields.....	263
Troubleshooting.....	264
No Login Screen.....	264
Missing or Incorrect List Selection .....	265
Password Prompt When Closing .....	266
<b>Cityworks Customization .....</b>	<b>267</b>
Cityworks Customize Form.....	267
Service Request Customize Layout .....	267
Work Order Layout Manager.....	271
Work Order Search Layout Manager.....	273
Customizing Print or Email Templates for Desktop.....	274
Updating Cityworks Print Templates .....	281
Customizing Server Print Templates .....	287
Map Images Print Template Configuration .....	288
Designer Configuration.....	288

<b>Appendix 1: Cityworks Codes</b> .....	<b>291</b>
Others Codes and Descriptions .....	291
Code Types Needed for Cityworks Inspections & Tests .....	295
<b>Appendix 2: Cityworks Data Template Fields</b> .....	<b>299</b>
<b>Appendix 3: Cityworks Desktop Administrator</b> .....	<b>306</b>
<b>Glossary of Terms</b> .....	<b>311</b>
<b>Index</b> .....	<b>325</b>



# Introduction

Cityworks Designer is the software program used to configure Cityworks for an organization. Extensive customization allows the organization to integrate Cityworks into the organization's usual workflow process. The administrative roles of Cityworks generally fall into two categories—establishing and maintaining the Cityworks database structure (Cityworks database administrator) and overseeing Cityworks, including configuring the Cityworks database (Cityworks domain administrator).

Preliminary setup is performed by the Cityworks database administrator and consists of creating the database and setting up the security and ODBC connection. Cityworks Database Manager is used to build the Cityworks database structure and update the database for new versions of Cityworks.

Once the preliminary setup is complete, the Cityworks database administrator uses the Cityworks Designer application to set up the domains and domain administrators. The remaining setup is completed by these Cityworks domain administrators. The Cityworks Designer Guide details the use of Cityworks Designer and the Cityworks Data Template to configure and customize Cityworks for the organization.

One person can serve as both a database administrator and domain administrator. In this case, the login gives them full access to all Designer functions, except for the Storeroom functions which must be accessed as a domain administrator. However, this login cannot be a Cityworks user because all Cityworks users must belong to a user group. Once the login is placed into a group, the superuser can no longer serve as the Cityworks database administrator.

**Layout Manager**, accessed directly in Cityworks and used to customize the Cityworks forms, is also discussed in this guide since it is only available to Cityworks domain administrators as well as information on customizing print or email templates.

The Cityworks domain administrator plays an integral role in the success of Cityworks as an asset management solution (AMS) for each domain. Taking the time up front to set up the full functionality of the software enables the users to quickly and efficiently use the software to benefit the organization in tracking their calls, assets, and the work done.

## Designer Functions

The functions displayed in Cityworks Designer are specific to the user and are determined by the login. All available functions for the login are listed in the directory on the left pane. If a function is not listed, it is not available for the login or must be accessed by some additional selections. For example, **Asset Setup** functions are only available when connected to the geodatabase.

Because Cityworks is customizable, many of the functions have lists that are set up in other windows. This may require moving from one function to another to populate the desired fields. Tips for moving between functions are added for your convenience.

The functions are discussed in this manual in the order they are listed in the directory found on the left pane of Designer. A different order may be used for adding the information depending on how the organization is setting up Cityworks. Many of the functions rely on **Codes** and **Preferences** which are found under the **Others** category which is listed last in the directory. Moving between functions is facilitated by the directory always being visible and, once a group is opened, requires only a click to open any of the listed functions.

Only one function, **Employees**, may be accessed by both Cityworks database administrators and Cityworks domain administrators. Employee groups serve two functions in Cityworks: first, to set security, and second, to group employees into common classifications, such as by crew, job title, labor rates, etc. Employees may be set up by the Cityworks database administrator (under **Administration > Employees**) or by the Cityworks domain administrator(s) (under **Cityworks Setup > Employees**).

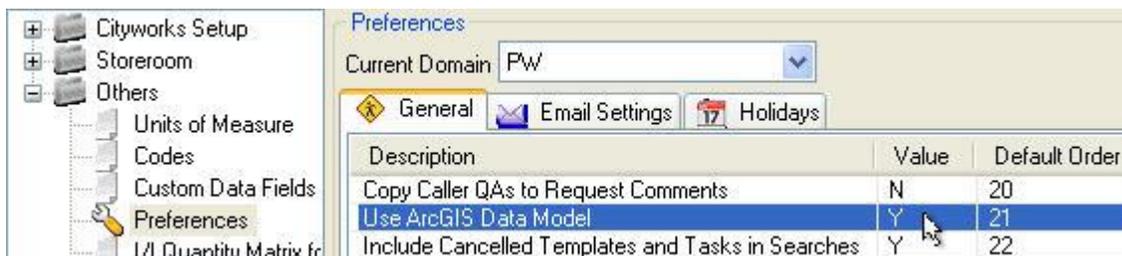
## Using Designer for the First Time

Logins must be set up for the Cityworks database administrator, Cityworks domain administrators, and any desired superusers (logins with access to both functions). The user accounts, including logins and passwords, are set up with the database, not in Designer.

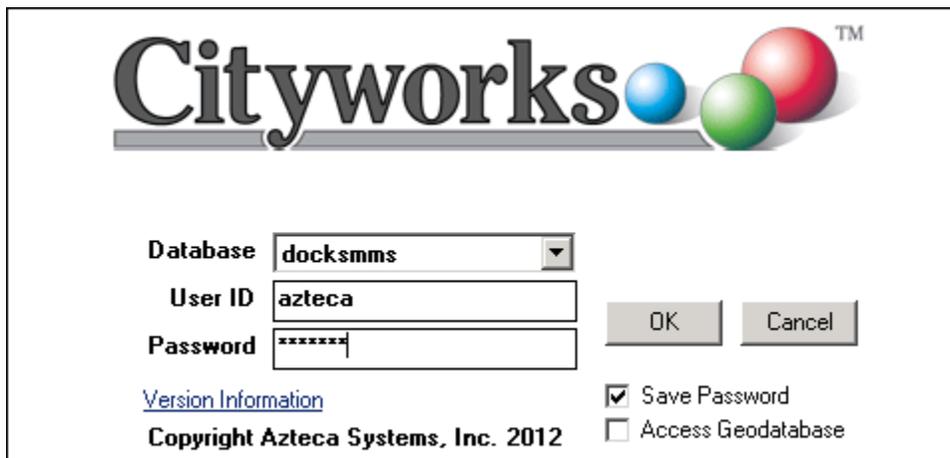
**NOTE:** *Cityworks superusers cannot be a member of any domain group and cannot use the end software. End users must belong to a group with specified rights.*

To use Designer the first time, it must be accessed by logging in as **azteca**. Using this login, the administrator defines the domains and one or more domain administrators for each domain.

**IMPORTANT:** *Once domains are set up, the Cityworks domain administrator must go in to **Others > Preferences** and click **Save** to activate the preference for using ArcGIS as the data model. This option, **Use ArcGIS Data Model**, is #21 in the list. By default, the value is set to **Y**.*



1. Open **Designer.exe** from the file location or desktop shortcut. The default location is: **C:\Program Files\Cityworks\Designer.exe**.
2. When the **Cityworks** login screen opens, select the Cityworks **Database** from the dropdown list.



**NOTE:** *Click on the **Version Information** link to view the version of Designer that you're running.*

3. Enter **azteca** for the **User ID** and the assigned **Password** (**systems** is the default password).

**NOTE:** The logins and passwords for Cityworks database administrators are defined in the RDBMS.

4. If desired, select the **Save Password** and/or Access Geodatabase checkboxes. For more information on the **Access Geodatabase** option, see [Geodatabase Tool](#).

**NOTE:** To access the **Asset Setup** functions, the **Access Geodatabase** box must be checked. Accessing the geodatabase requires an Esri license. The rest of the configuration can be done without accessing the geodatabase.

5. Click **OK**.

## Basic Functionality

Because many windows have the same functionality, this section explains the main features found in Designer. Detailed explanations of each function are found in the subsequent sections.

The title bar lists these items separated by hyphens.

- Name of the program (**Cityworks Designer**)
- Name of the current database to which Designer is connected
- Login of the current user (**User ID**)
- Active Designer function

If connected to the geodatabase, the title bar also lists the geodatabase and Esri license type in parenthesis.



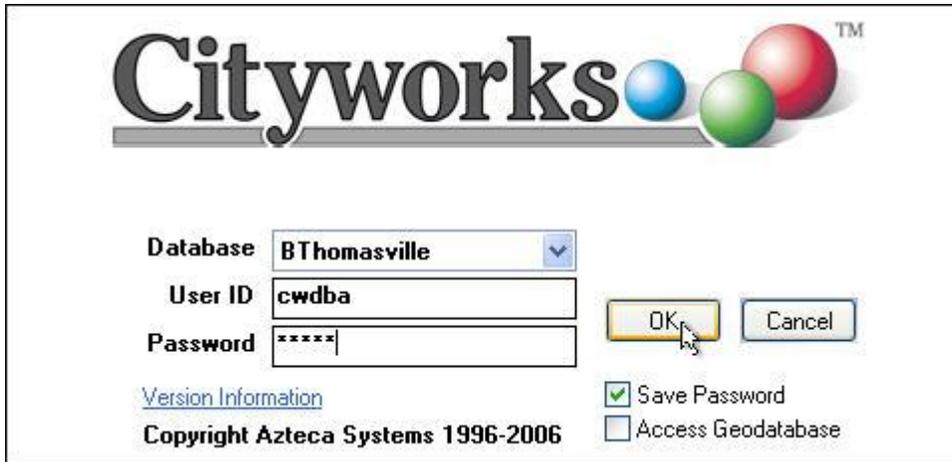
## Tools

There are three main tools on the Designer toolbar: Login, the Geodatabase tool and Exit.

### Login

The **Login** tool opens the **Cityworks** login screen for selecting another database or logging in as another user.

**NOTE:** Clicking **Login** cannot be cancelled. The user must log in again, even if the same login is used.



## Geodatabase Tool

The text displayed depends on if you're currently connected to the geodatabase (**Disconnect GeoDB**) or not connected (**Connect GeoDB**).

- **Disconnect GeoDB**—Click to disconnect from the geodatabase and work in standalone mode. This allows you to set up the Cityworks database without an Esri license. All of the functionality is available except for **Asset Setup**.



- **Connect GeoDB**—Click to connect to the geodatabase. Designer confirms that you have an ArcGIS license available for your login and activates the **Asset Setup** functionality.



**NOTE:** When you log in to Designer, you can check the **Access Geodatabase** checkbox to automatically connect to the geodatabase.

## Exit

Click **Exit** to close Designer.

## Cityworks Designer Menu

Click on the Designer icon or use the shortcut <**Alt** + space bar> to open the menu with options for moving, sizing, minimizing, maximizing, and closing.

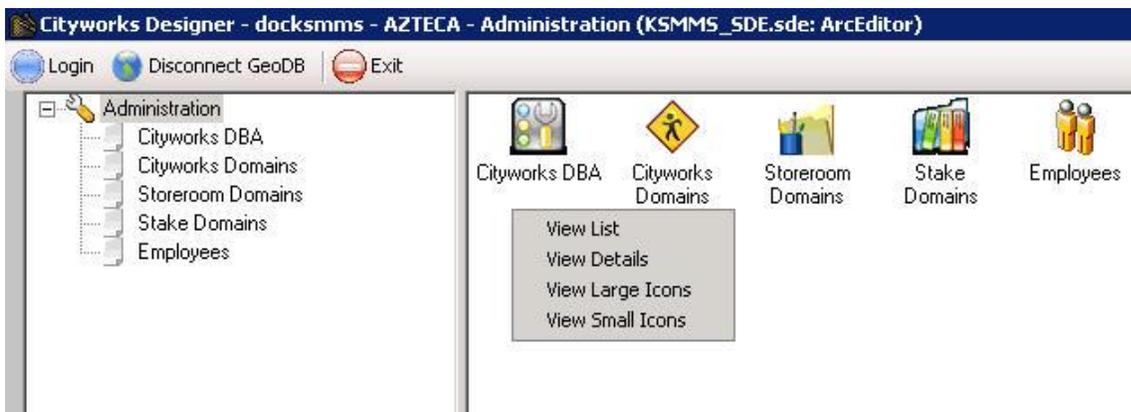
**NOTE:** Because **Close** is the active menu function by default, double-clicking on the icon closes Designer. Buttons for minimizing and maximizing are also located in the upper right corner of the title bar.



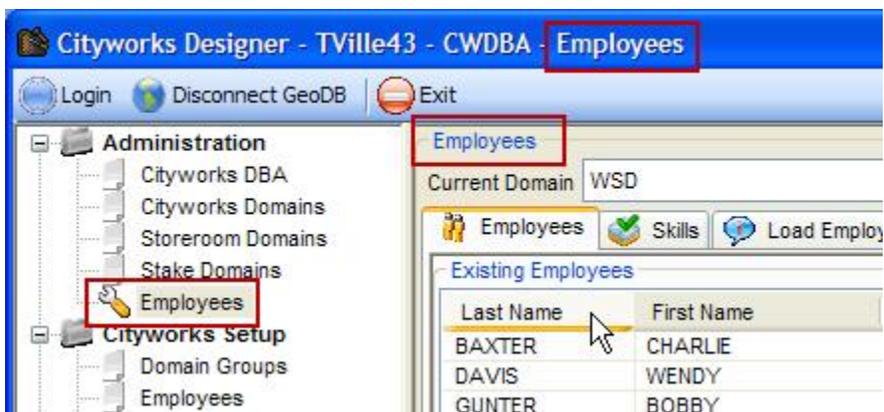
## Navigation Tree

Designer functions are listed in folders on the left side of the window. Click on the plus sign to display the contents of the folder. To access a function, either click on it in the panel on the left or double-click on the icon in the panel on the right. The function opens in the right-side panel.

To change the way the icons are displayed, right-click in the panel on the right and select the desired view. **View Large Icons** is the default setting shown below.

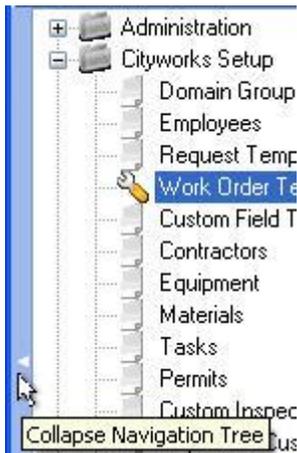


The name of the function that you are currently viewing is displayed in three locations: the title bar, the blue header at the top of the function panel, and in the hierarchy on the left. Note that a wrench icon also appears next to the function in the hierarchy on the left.



**NOTE:** Active tabs, buttons, and columns are shown with orange highlighting.

The navigation tree can be collapsed to view more of the current function by clicking on the white arrow located in the center of the left margin. To restore the tree, click the white arrow again.



## Buttons

Windows may contain multiple panels and/or tabs. The **Save** button saves all the information found on the panel or window to the database. The **Clear** button clears the fields so new information can be added. The **Add** button adds the item to the list box in the window and to the database. Most items in list boxes can be clicked on to reload the information back into the fields for editing. **Add** and **Remove** buttons may also appear in certain panels for features like **Comments**, **Keywords**, or **Attachments**. The **Refresh** button updates the information.

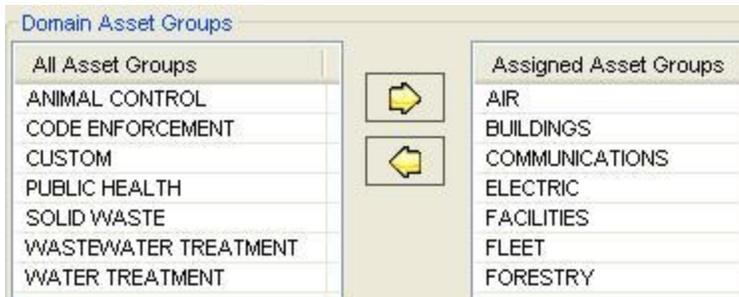


The **Delete** button deletes any selected item(s) from the database. You are always asked to confirm before an item is deleted so that it is not accidentally removed from the database.

Some items, like work order templates or service request templates, can have historical data connected to them, so Azteca Systems Inc. does not recommend deleting them. Instead, we recommend that it be inactivated so that the historical data remains intact. For more information, see [Inactive or Cancelled Information](#).

The **Remove** button usually removes a relationship linking data together, rather than deleting the information. Usually there is no confirmation when removing information.

When a set of arrows is found between two lists, each item is listed only once, on one side or the other. Select the desired item(s) from the list on the left to move the item(s) to the list on the right by clicking the right arrow. Use the left arrow to remove items. Double-clicking a single item also moves it to the other list. All items listed on the right are assigned in the database.



## Keywords

Type in a keyword and click the **Add** button in the **Keywords** pane to add it to the list and save it in the database.

**NOTE:** Spaces are not allowed in the keyword field, but an underscore may be used to connect words if desired.

## Multiple Selections

Multiple selections may be made using either <**Shift** + click> or <**Ctrl** + click>.

## Resizing

Double-click on the column header to expand the column to the width of the longest field. You can also adjust the column width by clicking on the right margin of the column and dragging to the desired width.



Panels can also be resized by clicking on the top, bottom, left, or right margin and dragging the margin to the desired location.

## Sorting

Lists are generally ordered alphabetically. To sort the list by a column, click on the column header.

**NOTE:** Numbers are sorted as text, so numbers are listed beginning with 1s, then 2s, 3s, etc.

Address
1400 E EDMOND ROAD
1583 E REDCLIFF LANE
1655 N OVERLAND WAY
1827 N DEL SIMMONS DR
1988 N BRITTANY DR
940 N PARRISH LANE

## Date Fields

Click in any date field to open the calendar. Click on the desired date and click **Select** to load the field.



**TIP:** To return to today's date, click on the **Today: <month/day/year>** at the bottom of the calendar. To view the entire year, click the maximize button or double-click on the title bar.

## Tabbing Sequence

The tabbing sequence for all windows flows from left to right, then top to bottom, from control to control. Use the **Tab** key in conjunction with the arrow keys to navigate through the window. Pressing **<Shift + Tab>** reverses the direction of the tab. Once the tabbing has gone through all the functions on the window, it disappears for one **Tab** before moving to the **Login** button and down to the selected function before returning to the window to start over again.

When on a tab, pressing the right arrow key moves to the next tab and pressing the left arrow key moves back through the tabs. If there is a divider, as on a **Hierarchy** tab, it stops there and the arrow keys move it to the right or left.

**NOTE:** See [Field Value Tables](#) for more information on moving within a list.

## Field Value Tables

Some windows have a table with a column for **Field** (or **Element**) and **Value**. These tables are found in the following locations.

- **Administration > Employees > Employees** tab

- **Cityworks Setup > Employees > Employees** tab
- **Cityworks Setup > Request Templates > Request Template Edit** form
- **Cityworks Setup > Request Templates > General Info** tab
- **Cityworks Setup > Work Order Templates > General** tab
- **Cityworks Setup > Contractors > Contractor Edit** form in the **Information** and **Custom Fields** boxes
- **Cityworks Setup > Equipment > Equipment Edit** form in the **Custom Fields** box
- **Cityworks Setup > Materials > Material Edit** form in the **Custom Fields** box
- **Server Setup > GIS Services > Map** and geocode service definitions box
- **Others > Preferences > General** tab

Type in the first letter (or up to three letters) to move to the first field in the list beginning with that letter combination or use the up/down arrows once a field is highlighted to move to another field. Press the space bar to move to the **Value** column for the field, type in the information, and press the **Enter** key to close the field.

Field	Value
Category	
Priority	3
Days to Complete	1.00
Account	100458
Shop	
Date	4/21/2006
Auto Create Tasks	Y
Custom Field Category	
Stage	Actual
Expense Type	Maintenance
Cancel	N
Include Weekends in Cycles	Y

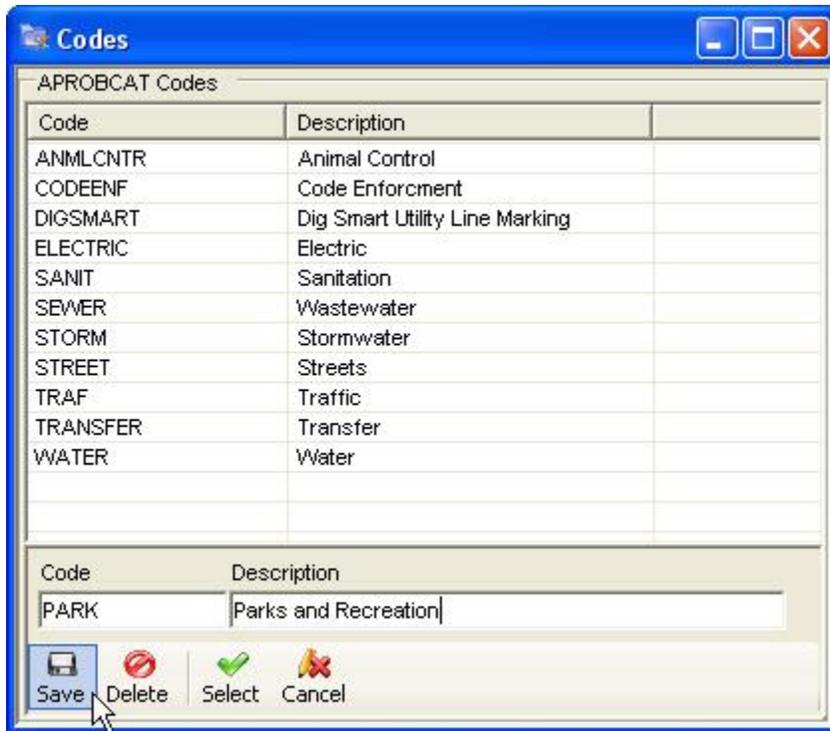
Some fields may already be populated with default values. When there are only a few options, click the space bar to toggle between the options. On yes/no fields, click the space bar to toggle between **Y** and **N** (or double-click in the field). Dropdown selections or selection boxes are available for populating some values.

### Define New Code

Some dropdown lists have the option **Define New Code** listed alphabetically with the other options.



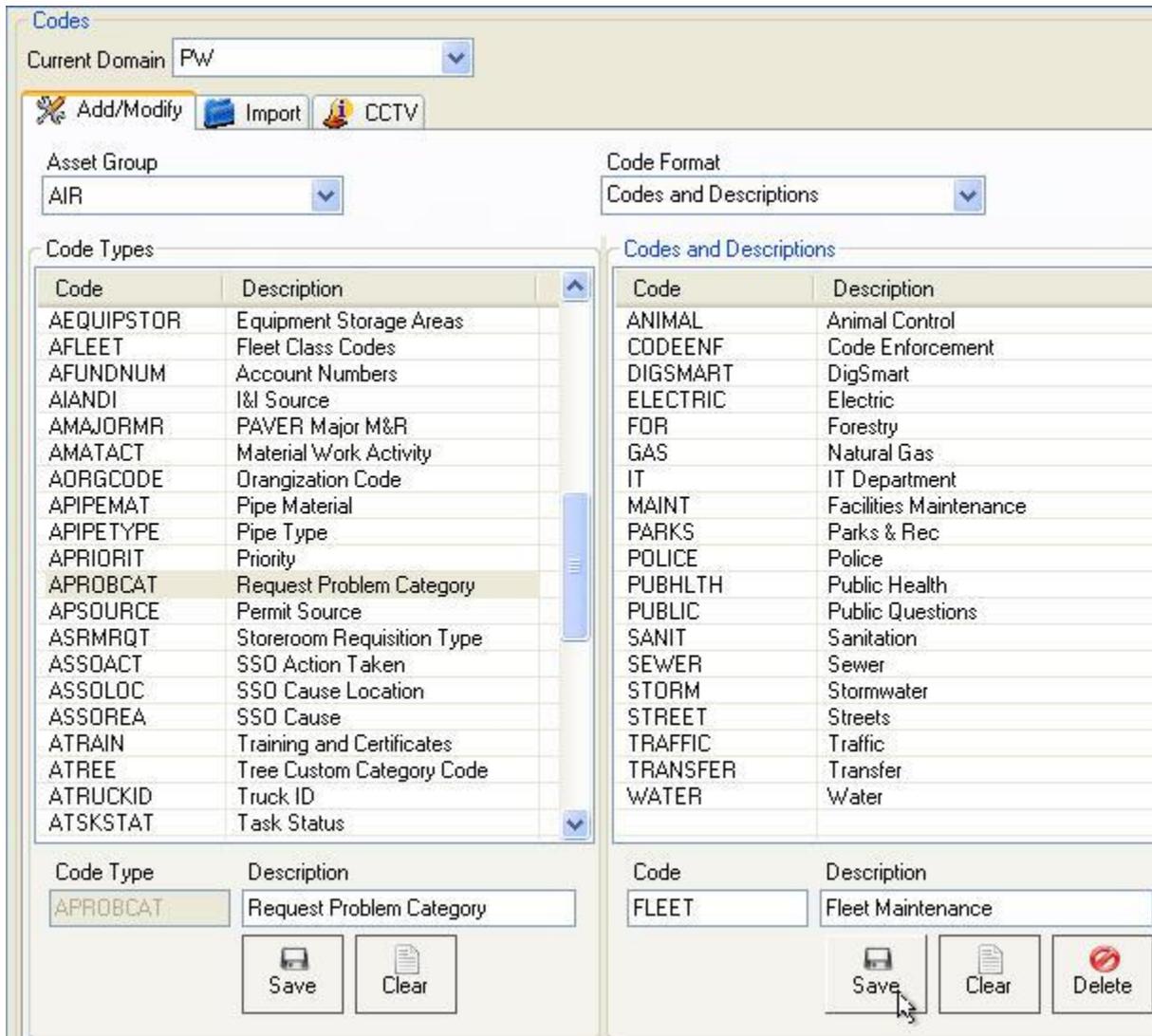
Select this option to add a new code and description. A **Codes** window, similar to the one below, will open.



Enter the **Code** and **Description** and click **Save** to add the new code.

**NOTE:** The code type is listed under the title bar. A **Code** may be 50 characters long and a **Description** up to 100 characters in length.

These codes can also be added in **Others > Codes** by selecting the desired **Code Types** from the list on the left and entering the codes on the right.



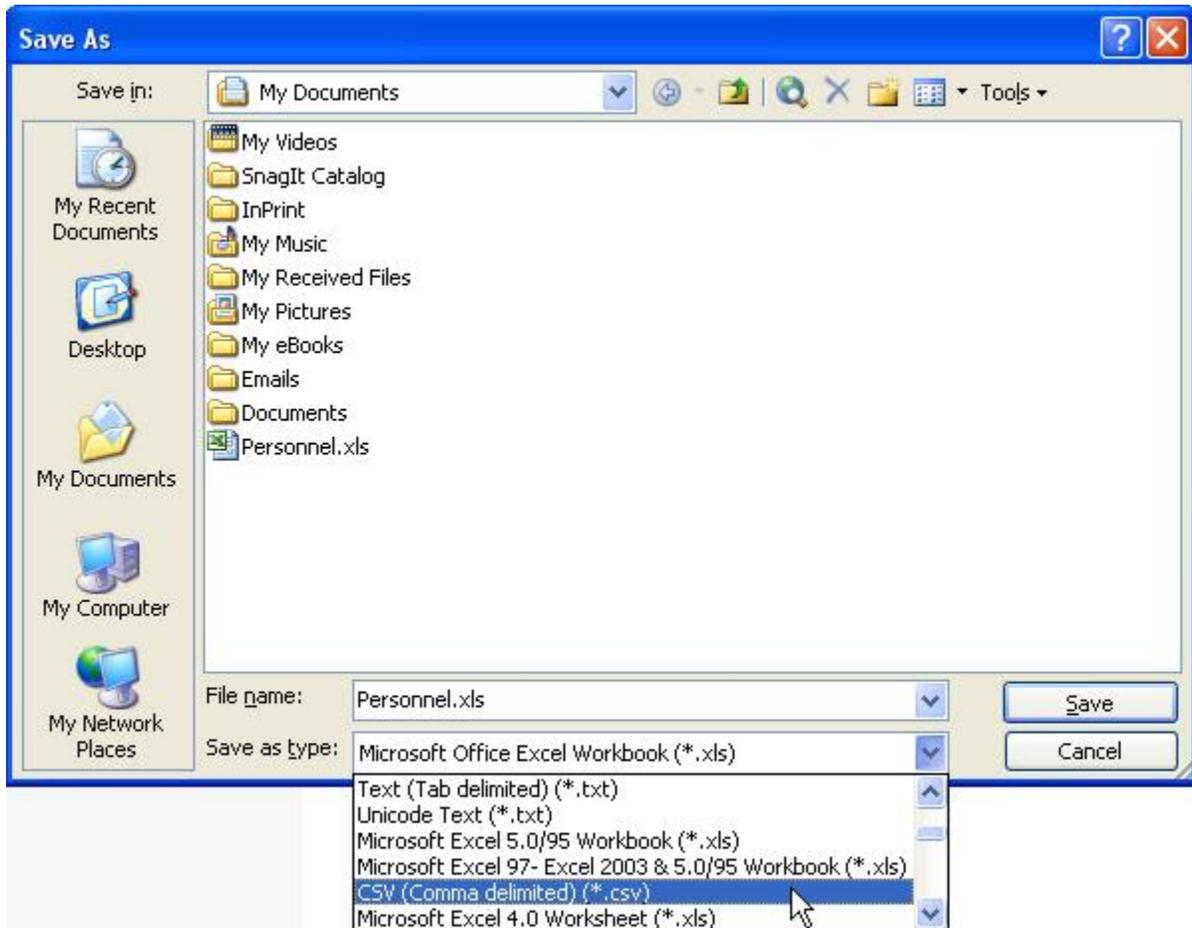
## Importing Data

Text files can be used to download some of the required information into Designer. These are the functions, windows, and tabs where data can be imported.

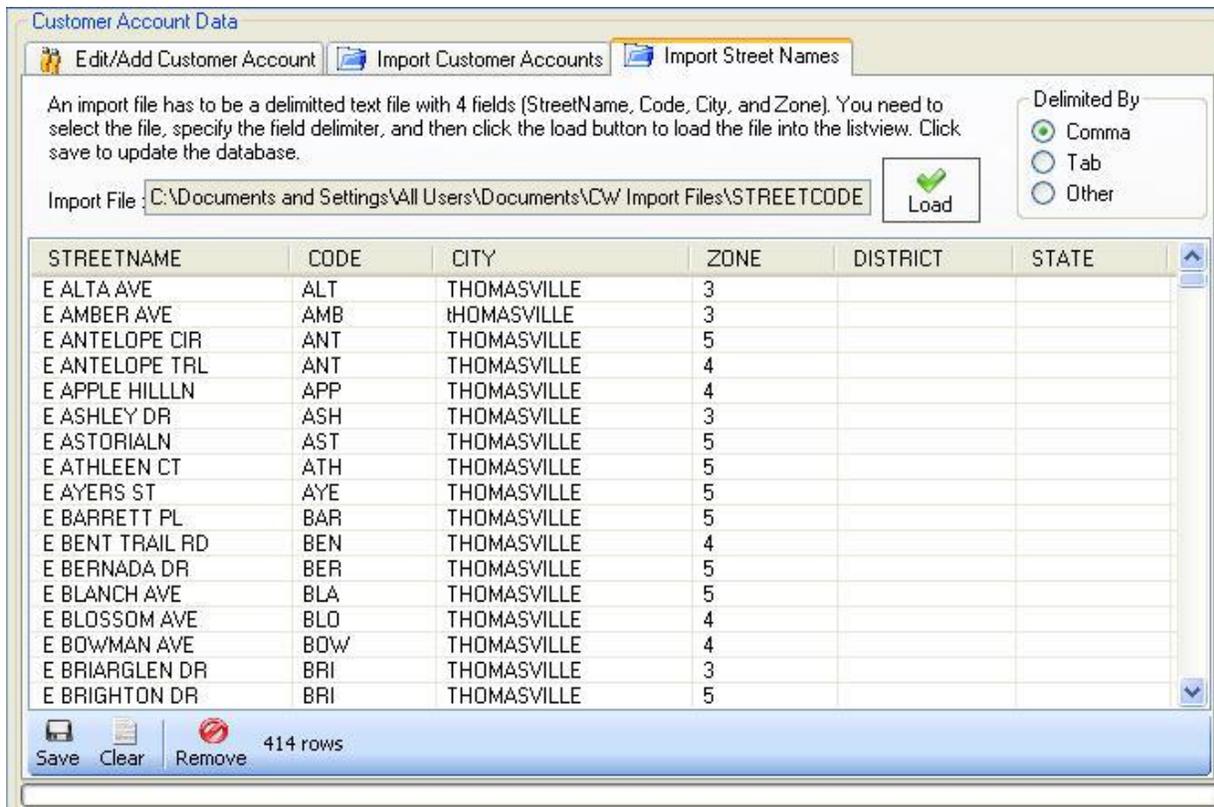
- **Administration > Employees > Load Employees** tab
- **Cityworks Setup > Employees > Load Employees** tab
- **Cityworks Setup > Work Order Template Classes > Load** tab
- **Others > Codes > Import Codes** tab
- **Others > Customer Accounts > Import Customer Accounts** tab
- **Others > Customer Accounts > Import Street Names** tab
- **Others > Other System Codes > left lower pane**

Instructions are found near the top of the tab that explain the requirements for the file, such as the number and type of fields that are needed. The files must be text files with the correct database field names for the data to be imported.

To convert Excel files to text files, open the file in Excel and click **File > Save As**. Select either the **Text (tab delimited) (\*.txt)** or **CSV (Comma delimited) (\*.csv)** option and click **Save**.



1. In Designer, double-click in the **Import File** field.
2. Navigate to the desired file and double-click on it to load the path into the **Import File** field (or select and click **Open**).



3. Select an option for **Delimited By**:
  - **Comma**
  - **Tab**
  - **Other**—Specify the delimiter. A semi-colon is the default.
4. Click the **Load** button to import the data into the list.

If you get an error, check to see if there is a row of column headers at the top of the file you're trying to load. Also check to see if the text is in the correct column order shown in Designer at the top of the import tab.

**NOTE:** You can view the **Import Results** on the **Import** tab under **Others > Codes**. Multiple files can be loaded at the same time, so this allows you to see which ones imported successfully.

5. If desired, remove any unwanted record(s) from the list by selecting them and clicking **Remove**.
6. Click **Save**.

## Setting up Data Trees

In a number of locations in Cityworks, information is presented in a tree structure. For example, requests, contractors, equipment, materials, or tasks. The trees are set up in Designer. See each section for more information.

- **Cityworks Setup > [Request Templates](#)**

- **Cityworks Setup > [Contractors](#)**
- **Cityworks Setup > [Equipment](#)**
- **Cityworks Setup > [Materials](#)**

**NOTE:** Cityworks Storeroom administrators may also set up the materials tree in Storeroom.

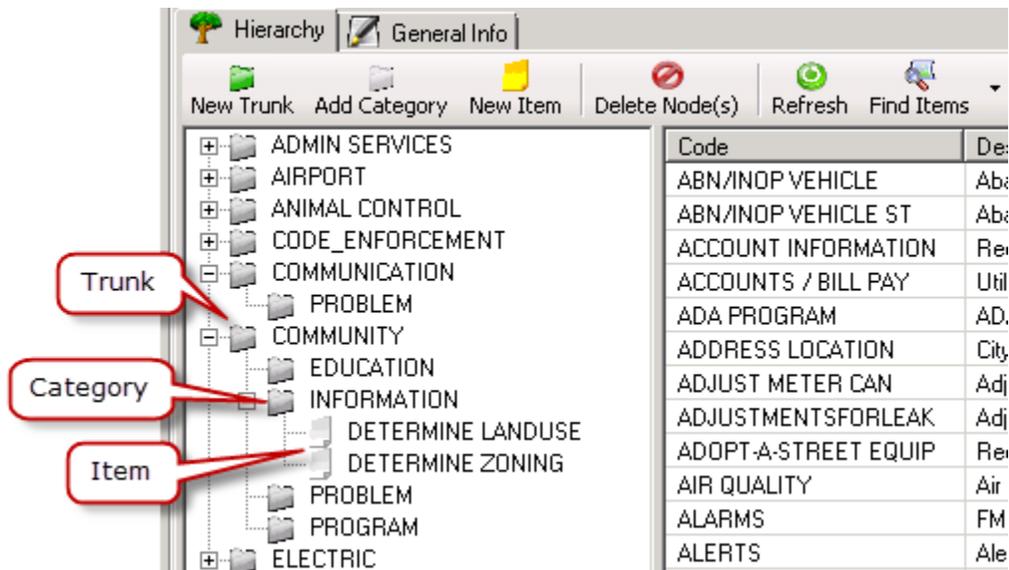
- **Cityworks Setup > [Tasks](#)**
- **Server Setup > [Contract Line Items](#)**

You can also use the Cityworks Data Template to add multiple items to the Cityworks tables listed below. See [Cityworks Data Template](#) for more information on this functionality.

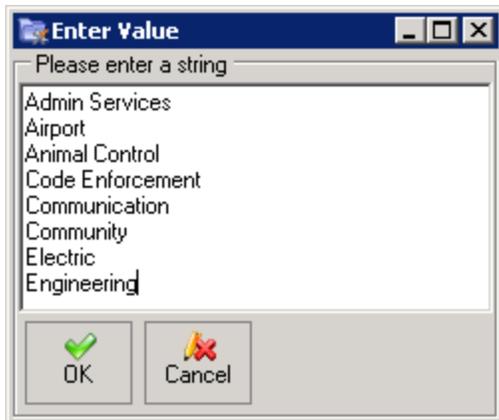
- **ContractorLeaf**
- **Employee**
- **EquipmentLeaf**
- **MaterialLeaf**
- **ProblemLeaf**
- **TaskLeaf**
- **WOTemplate**

## Hierarchy Tab

The hierarchy is made up of three levels: trunk, category, and item. Trunks are essentially folders that contain categories and items. Items can be placed in a category or in a trunk.



1. Click **New Trunk** to add trunk name(s).
2. Type the name of the trunk. Press **Enter** and type the name of the next trunk. Repeat until all desired trunks are entered.



**TIP:** The information can be entered in any order, but they will be listed alphabetically in the hierarchy.

3. Click **OK** to add the trunks to the **Hierarchy**.

The next step is to add items to the trunks. If you wish to categorize the items within the trunk, first you'll need to add those categories.

4. Click on the trunk and then click **Add Category**.
5. Type the name of the category. Press **Enter** and type the name of the next category. Repeat until all desired categories for this trunk are entered.



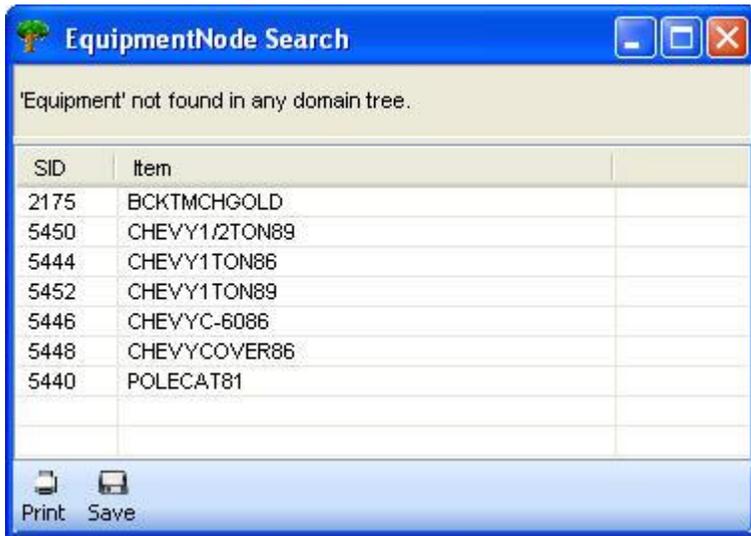
6. Click **OK** when finished.
7. To add an item, select either the trunk or category and click **New Item**.

If you used the [Cityworks Data Template](#) to populate your database, the list on the right may already be populated. If this is the case, select an item or multiple items and drag them to the desired location in the hierarchy.

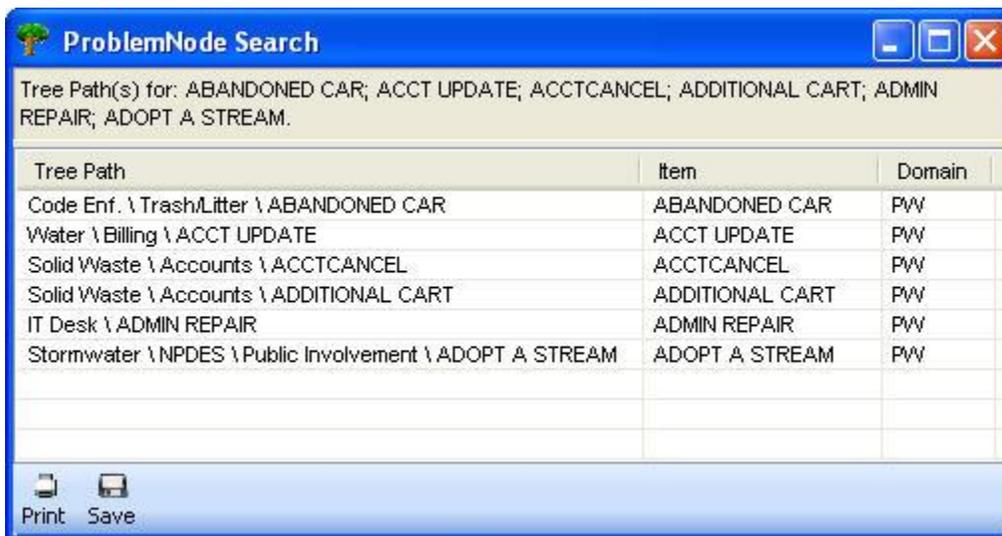
There are two ways to search for items. The **Find Items** dropdown list contains two options:



- **Find Items not in Tree:** Click to view all of the items in the list on the right that have not been placed in the hierarchy yet. If desired, you can **Print** or **Save** the list.



- **Find Selected Items in Tree:** Select an item (or multiple items) in the list on the right and click **Find Selected Items in Tree** to see where they are located in the hierarchy. Items can be placed in more than one location in the hierarchy.



**NOTE:** If an item has not been placed in the hierarchy, the **Tree Path** for that item will be blank.

**IMPORTANT:** Before deleting any item from the list on the right, use the **Find Items > Find Selected Items in Tree** option to see if it appears in more than one domain. This is especially important for materials and equipment because the same materials and equipment may be used for more than one domain. Deleting an item deletes it from all domains in which it is found.

The **Delete Node(s)** button deletes the node and all information contained in it from the hierarchy. It does not delete the item from the list on the right or from the database.

## Additional Database Information

Some tables in Designer have hidden columns containing extra database information, like the **Code** element values that point to where Cityworks pulls items out of the element table, default values, etc. Since this additional information is not needed to access the basic Designer functions, the columns are hidden from view.

To open the hidden columns, hover the mouse to the right of the last column header until the cursor changes to an arrow with a double bar. Click and drag the column open.

Value	De... ← →
ACTUAL	AC...
STREET	ST...
ENABLED	EN...
DISABLED	DIS...
DISABLED	DIS...

**NOTE:** Hidden columns are present whenever there is an arrow with a double bar.

## Inactive or Cancelled Information

Azteca Systems Inc. does not recommend deleting items like employees, tasks, custom field templates, or templates for service requests, work orders, inspections, etc., because these items are tied to historical information in the database. Instead, we recommend inactivating or cancelling them. Inactivated employees or cancelled templates will not show up in Cityworks, but they will appear grayed out in Designer.

- To designate an employee as inactive, go to **Employees** and select the desired employee. Change the **Is Active** field to **N**.

Field	Value
Employee ID	
Login ID	NGAINES
Last Name	GAINES
First Name	NATHAN
M.I.	
Work Phone	
Email	
Pager	
Title	Streets & Traffic Supervisor
Organization	STR
Hourly Rate	\$32.50
Image	
Is Active	N

- To cancel a service request template, go to **Request Templates** and open the desired template. On the **General** tab, change the **Cancel** field to **Y**.
- To cancel a work order template, go to **Work Order Templates** and select the desired template. Change the **Cancel** field to **Y**.
- To cancel a custom field template, go to **Custom Field Templates** and select the desired category in the **Existing Categories** panel and click the **Inactive** radio button.

Custom Field Templates

Define Custom Categories

Apply to Table  
WORKORDER

Existing Categories

Category	Active	Description
ACCOUNT...	Y	Account number
ADOPT-A-S...	Y	Adopt-A-Stream I
ATTRIBUTE	Y	Attribute data for
BUILDINGS	N	Buildings
BULKTRASH	Y	Bulk Trash Picku
CBCLEAN	Y	Catch Basin Clea

Add/Modify  
BUILDINGS

Description  
Buildings

Inactive  
 Active

The delete button should only be used when the category has not been used in a work order or a service request. Otherwise set this flag to inactive to prevent future use.

- To cancel a task, go to **Tasks** and open the desired task. Check the **Cancel Task** checkbox.

Task Edit - NOTIFY

Name: NOTIFY Description: Notify critical facilities of flushing schedule

Assigned To: [Dropdown] Shop: [Dropdown]  Cancel Task

Estimated days to complete: 1 Response Label: Response  Notify M M

# Administration

Administration functions are performed by the Cityworks database administrator to set up the database administrators, domains, and domain administrators. The **Administration** functions are **Cityworks DBA**, **Cityworks Domains**, **Storeroom Domains**, **Stake Domains**, **Password**, and **Employees**.

Cityworks **Administration** is accessible to all Cityworks database administrators once logins have been set up using the **Cityworks DBA** function.

**NOTE:** The **Password** function is only available for users who configure Cityworks with the encrypted password option.



- **Cityworks DBA**—Set up the Cityworks database administrators and logins.
- **Cityworks Domains**—Define the domains and domain administrators with their logins. Also assign the defined asset groups to the domains once the Cityworks domain administrator has populated the asset groups. Domains are used to manage security.
- **Storeroom Domains**—Set up the Storeroom domains and Storeroom domain administrators with their logins. Only available to organizations using Storeroom.
- **Stake Domains**—Set up the **Stake Domains** for the work order and/or service request descriptions. Only available to organizations using the Dig-Smart interface.
- **Password**—Generate an encrypted password for each user's real password so users cannot log into the Cityworks database except through Cityworks.

**NOTE:** Cityworks must be configured to work with encrypted passwords for this function to be available.

- **Employees**—Sets up the basic employee information, including labor rates and skill sets.

**NOTE:** **Employees** may also be accessed by Cityworks domain administrators under **Cityworks Setup**.

Some overlap occurs between Cityworks database and domain administrators. For example, employees may be set up either by the Cityworks database administrator in **Administration > Employees** or by the Cityworks domain administrator(s) in **Cityworks Setup > Employees**. All security for service requests and work orders is set by employee groups. In 2012.1, the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool. These groups can also be used to add labor costs. Employee groups must be set up by the domain administrator in **Cityworks Setup > Domain Groups**.

## Cityworks DBA

The Cityworks database administrator is responsible for setting up and maintaining the Cityworks database structure and creating the domains.

Duties of the Cityworks database administrator:

- Create the Cityworks database, user accounts, and ODBC connection.
- Establish domains and assign a Cityworks domain administrator for each domain.
- Assist in the installation of new versions of Cityworks, including updating the Cityworks database.

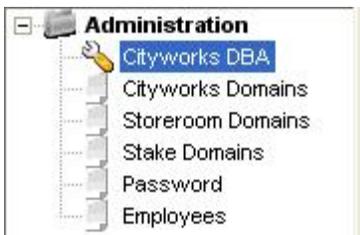
Logins for the Cityworks database administrators are assigned on the **Cityworks DBA** window.

**NOTE:** See [Using Designer for the First Time](#) to access Designer with the default Cityworks administrator login.

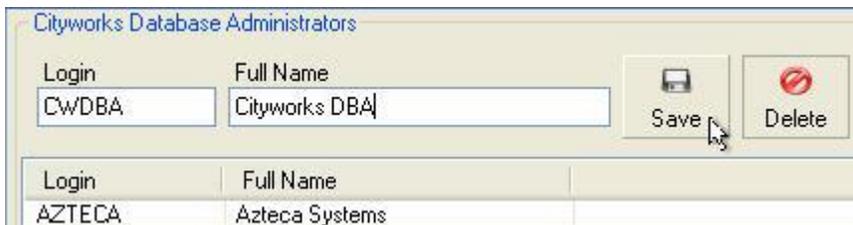
1. To expand the **Administration** section, click the plus sign (+) next to it.



2. Click on **Cityworks DBA** to open the **Cityworks Database Administrators** window.



3. Enter the **Login** and **Full Name** of the Cityworks database administrator.



4. Click **Save** to add it to the list below and the database.
5. Repeat these steps to add any other Cityworks database administrators.

**NOTE:** Once the Cityworks domain administrators are set up, Azteca Systems Inc. recommends changing the password for the **azteca** login in the RDBMS to secure the system.

## Cityworks Domains

Cityworks may consist of a single domain or multiple domains—it depends on how your organization wants to organize security and access to information. A domain is a distinct group with shared work activities and resources. Each domain acts as a filter with its own request templates, work order templates, and employees.

An employee can only belong to one domain. The Cityworks database administrator may administer in multiple domains as long as they are not added as employees to any domain. All Cityworks domain administrators assigned to a specific domain can make changes to the configuration settings for that domain only. They can also edit service requests and work orders, even after they have been closed.

**NOTE:** *If you are using Storeroom, materials may be separated by Storeroom domains. Users only see the quantity and costs of materials on the work order **Material** panel for storerooms they have permission to access.*

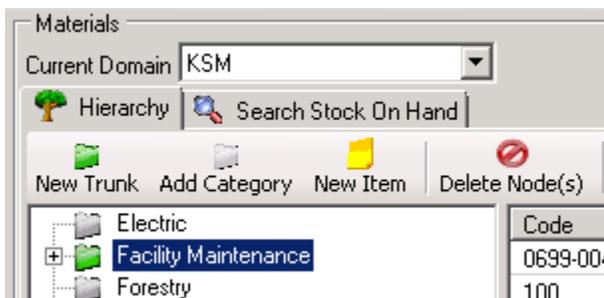
When multiple departments are involved in performing specific tasks on a work order (e.g., a street department that repaves after a water main is repaired), these departments may belong to the same domain or security settings can be used to give access to the other domain. The other Cityworks domain administrator may have permission to edit the full work order template or only certain tasks and/or costs. Access to a single work order may also be set on the work order but if this is a common occurrence, it should be done at the template level. Costs from another domain can be added to a work order if permission is given.

**TIP:** *Many organizations with interdepartmental users choose to use one domain to share information and limit access through the security functions.*

Call takers in a central call center may be set up to access more than one domain. In this case, the **Submit To** or **Dispatch To** employee can be set in the request template in Designer. While a user may access request codes for another domain and create a service request, the request **Submit To** or **Dispatch To** employees are accessible only to members of the same domain.

Once Cityworks domain administrators have been added, they set up the asset groups. Since asset groups may belong to multiple domains, the Cityworks database administrator is responsible for assigning the asset groups.

Material and equipment are shared by domains; however, each domain sets up their own material and equipment hierarchies. Use the **Current Domain** dropdown at the top of the hierarchy to switch to a different domain. Storeroom also allows the domain to be switched, but users only see the storerooms that they have permission to view.



1. Log in to Designer as the Cityworks database administrator and click on **Cityworks Domains**.
2. Type in the **Name** and **Description** for the domain at the top of the panel and click **Save**.

**Cityworks Domains**

Name: WSD  
 Description: Treatment Plants  
 Save Clear Delete

Domain Name	Description
PW	Public Works
WSD	Treatment Plants

District  
 Northeast  
 Northwest  
 Southeast  
 Southwest

---

**Domain Administrators**

Login: CWDBA  
 Full Name: Cityworks Database Administrator  
 Add Delete

Login	Full Name
WSD	WSD

---

**Domain Asset Groups**

All Asset Groups  
 AIR  
 ANIMAL CONTROL  
 BUILDINGS  
 CODE ENFORCEMENT  
 COMMUNICATIONS  
 CUSTOM

Assigned Asset Groups  
 WASTEWATER TREATMENT  
 WATER TREATMENT

**NOTE:** If you're using Server and want to use districts, check the applicable **District** checkboxes for the domain. Districts can represent any geographical area desired—for example, when several organizations are responsible for providing different services based on city, county, or other boundaries. Districts are populated by the domain administrator under **Others > Codes > ADISTRRICT**.

3. Type in the **Login** and **Full Name** of the **Domain Administrators** in the center panel and click **Add**.
4. Once the domain groups have been set up, they will display on the left in the **Domain Asset Groups** panel. Select the desired **Asset Groups** for this domain and click the right arrow to move them to the list on the right.

**NOTE:** A domain administrator will need to set up the asset groups. See [Asset Group Definitions](#) for information on setting up the asset groups. The database administrator may also be able to set up the asset groups if he/she is a superuser.

**Domain Asset Groups**

All Asset Groups  
 STREET  
 TRAFFIC  
 WASTEWATER TREATMENT  
 WATER  
 WATER TREATMENT

Assigned Asset Groups

**TIP:** Double-clicking on a single item in either list moves it to the other list.

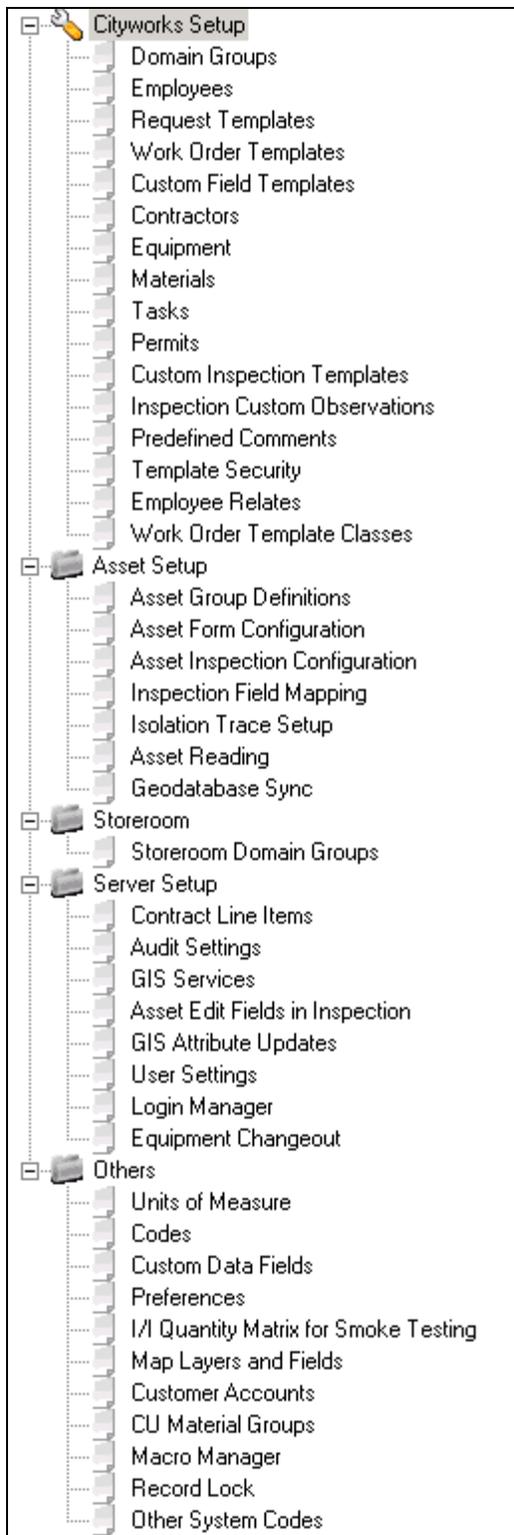
## Domain Administrator Role

Cityworks domain administrators are in charge of configuring and customizing Cityworks for use in their domain.

Duties of the Cityworks domain administrator:

- Select the asset groups and related GIS layers for the domain.
- Establish employee groups and assign security.
- Set up tree structures and keywords for requests, contractors, equipment, materials, and tasks.
- Create request templates with a series of questions and answers and other relevant information.
- Create work order templates and tasks.
- Define custom fields.
- Populate tables with attributes for employees, contractors, materials, and equipment.
- Define valid values for selection boxes and dropdown lists.
- Link geodatabase fields to Cityworks fields (field mapping) to automatically populate asset attributes on Cityworks inspection/test forms.
- Customize form layouts, printing templates, and reports.

The Cityworks domain administrator functions consist of these groups. The **Storeroom** function is listed only for logins of Storeroom domain administrators. It is not accessible to superusers who oversee more than one domain.



- **Cityworks Setup**—Allows customization of the request, work order, and inspection templates along with lists of employees, contractors, equipment, materials, tasks, and permits. See [Cityworks Setup](#) for more information.

- **Asset Setup**—Works with the asset information and mapping functions. See [Asset Setup](#) for more information.
- **Storeroom**—Defines the Storeroom domain groups to allow permission for employees to perform the storeroom transactions. See [Storeroom](#) for more information.
- **Server Setup**—Contains the settings used in Cityworks Server AMS. **Server Setup** is only displayed when there are valid Server tables in the database. See [Server Setup](#) for more information.
- **Others**—Performs miscellaneous functions, including preferences. See [Others](#) for more information.

## Storeroom Domains

The **Storeroom Domains** function is for organizations using the Storeroom application to manage materials. This function sets up the Storeroom domain names, descriptions, administrators, and storerooms.

Once a storeroom domain has been defined, Cityworks assumes that the Storeroom application has been installed, licensed, and is being used. This requires that all materials have been assigned to a storeroom and populated with the stock-on-hand. In addition, transaction permissions must be set for each storeroom.

1. Click on **Storeroom Domains**.

**Storeroom Domains**

Name: THOMASVILLE  
 Description: Thomasville Storerooms

Save Clear Delete

Domain Name	Description
THOMASVILLE	Thomasville Storerooms

**Domain Administrators**

Login:   
 Full Name:

Add Delete

Login	Full Name
PW	PW Administrator
WSD	WSD Administrator

**Storerooms**

All Storerooms

DT1
ET1
PT1
RT1
ST1
TT1
WT1

Assigned Storerooms

ESIDE
MAIN

2. Enter the **Name** and **Description** for the Storeroom domain at the top and click **Save**.
3. Repeat the previous step for all desired domains.
4. Select the desired domain from the list on the top right panel to activate the middle panel.
5. Enter the **Login** and **Full Name** of each Storeroom Domain Administrator in the middle panel and click **Add**.

***IMPORTANT:*** A login name can only be assigned to one domain.

6. Repeat these steps to assign domain administrators for each domain.
7. Click the **Create new storeroom location** button (magnifying glass icon) to open the **STORERM Codes** box.



8. Enter the **Code** and **Description** for the storeroom and click **Save**.
9. Repeat this step to add all desired codes. When done, close this window.

***NOTE:*** Storeroom codes may also be set up by the Cityworks domain administrator under **Others > Codes > Others category > STORERM**.

10. In the main Designer window, assign the storerooms to the domain by selecting them from the list on the left and clicking the right arrow to move them to the **Assigned Storerooms** list on the right. You can also double-click on a single item in either list to move it to the other list.

***TIP:*** While a storeroom may belong to more than one domain, not many organizations choose to have multiple domains run the same storeroom(s).

***TIP:*** Double-clicking on a single item in either list moves it to the other list.

11. Repeat the previous step to add all of the storerooms to the desired domain.

## Dig-Smart Stake Domains

**Stake Domains** is for organizations that use the Dig-Smart interface for marking utility lines prior to digging. Dig-Smart is a GIS-centric application that interfaces with ArcMap.

**NOTE:** See **Dig-Smart** in [Glossary of Terms](#) for more information on this application.

A ticket created in Dig-Smart can be set up to automatically generate a request or work order. These steps must be taken to set up Dig-Smart.

- Under **Custom Field Templates**, create a work order and/or service request with a **Category** named **DigSmart** that contains these exact fields:
  - DS\_TICKETID
  - DS\_STARTDATETIME
  - DS\_CONTACT
  - DS\_COMPANY

**NOTE:** See [Custom Field Templates](#) for details on how to create these fields.

- Create a DigSmart request and/or work order template and apply the custom field template to each domain that handles Dig-Smart requests and/or work orders.

**IMPORTANT:** A Dig-Smart template must be defined as a service request or work order before proceeding with these steps. See either [Request Templates](#) or [Work Order Templates](#) for instructions on how to set up the desired Dig-Smart template.

1. Click on **Stake Domains** under **Administration**.
2. Select the **Cityworks Domain** from the dropdown.
3. Select the radio button option for **Work Order** or **Service Request** to list the associated templates.
4. Select the desired **Template** on the left.
5. Select the **Initiated By** employee from the list on the right.
6. Click the **Save** button to save the information to the database and list the information in the lower pane.

Stake Domains

Select a Cityworks Domain

WSD  Work Order  Service Request

Problem Code	Initiated By
Template	Employee
BACKUP	BAXTER, CHARLIE
CAVE IN	BEEMAN, AMY
CHANNEL BACKUP	CHARLES, RYAN
CULVERT BACKUP	GUNTER, BOBBY D
DIGSMART	HASLAM, BRIAN L
EROSION	HENRY, WILL
HIGH BILL	KLEIN, ADAM
INLET BACKUP	LARSEN, FREDERICK J
LEAK	LIEBER, LAURA
LOW PRESSURE	LONG, DEREK
MAIN BREAK	LUCKEY, KATE
METER PROBLEM	LYONS, JAMES
MISSING GRATE	PLANTE, SEAN
MISSING MH COVER	PORRIE, JAMES
NO WATER	PULLMAN, JOHN
ODOR	STANNEL, CHRIS
OTHER WATER ISSUE	THOMAS, SARA
PRESSURE DROP	WOLFE, ED
ROAD LITTER	WSD, WSD
SEWER LEAK	

Save Delete

Domain	WO/SR	Template	Initiated By
PWW	SR	DIGSMART	DANIELS, EMILY

To delete a **Stake Domain** from the database, select the **Initiated By** employee from the list on the lower pane and click the **Delete** button.

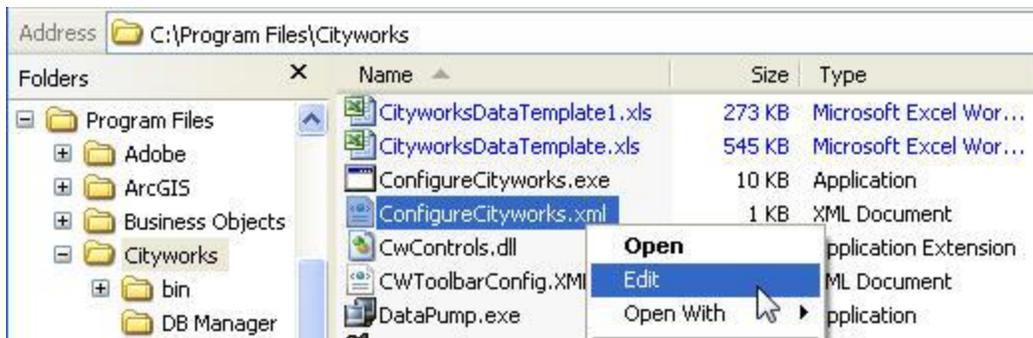
## Password

The password option is for organizations using the encrypted password function. Follow the instructions for [Adding Password to Designer](#) if **Password** is not listed under **Administration** in Designer.

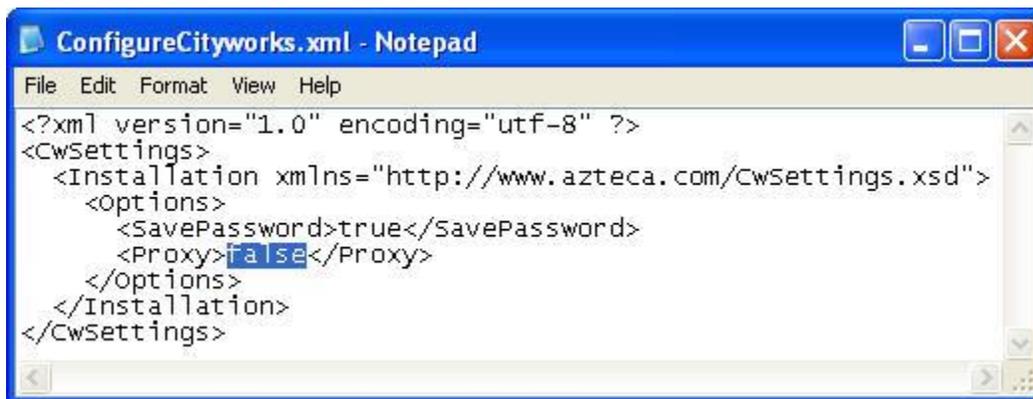
### Adding Password to Designer

If the **Password** option is not listed under **Administration**, Cityworks has been installed without the encrypted password option. It may be added by changing the **ConfigureCityworks.xml** file which populates the registry keys read during the login process.

1. Open Windows Explorer and navigate to the **ConfigureCityworks.xml** in the **Cityworks** folder. The default location is: **C:\Program Files\Cityworks\ConfigureCityworks.xml**.



2. Right-click on it and select **Edit**.



3. Change the **false** between **<Proxy>** to **true**, save, and close the file.

**NOTE:** The **SavePassword** option above the proxy setting allows the user to save the password on the login screen if set to **true**.

4. Select **All Programs > Cityworks > Configuration > Configure Cityworks** from the **Start** menu. Or if Windows Explorer is still open, click on **ConfigureCityworks.exe**, immediately above the **ConfigureCityworks.xml** file in the **Cityworks** folder to configure Cityworks.



**NOTE:** Nothing opens on the user interface and this takes just a few seconds to complete.

5. Click **Login** from the Designer toolbar and log in again to refresh the software and activate **Password**.

## Encrypting a Password

The **Password** function sets up the link for encrypted password so users are unable to log into the database, except through the Cityworks application, and thus protects against unauthorized use. The Cityworks database administrator should maintain the list of the logins with their real and encrypted passwords.

**IMPORTANT:** Encrypted passwords should never be disclosed or distributed.

1. Click on **Password**.

2. Type the user's database login into the **DB Login** field.

**Encrypt a Password**

Cityworks has an optional feature which limits all users' capabilities outside of the Cityworks application. This is useful when users have access to other third-party tools such as report writers or SQL tools that can access or alter important or sensitive data.

In order to implement this function, two steps must be taken. First, when the software is installed on a user's machine, the "Limited Login" option must be set to 'Yes'. Second, using this form, each user's login name and password must be entered below. Designer will generate an encrypted password which you will need to enter into your database system when you create the user's account. For example, you are creating a user named "foreman1" with a password of "mrwiggly." Enter "foreman1" into the User ID box, and enter "mrwiggly" into the Real Password box.

Designer will generate an encrypted password which you must enter as the user's password when creating the user in your database system. When a user logs in as "foreman1" they will enter "mrwiggly" as the password, Cityworks will encrypt the password and send the encrypted password to the database for actual login. As long as the user does not know the encrypted password, they cannot log into the database with any other application.

DB Login: sthomas

Real Password: [ ]

Encrypted Password: [ ]

Clear

3. Type the user's assigned password into the **Real Password** field which generates the **Encrypted Password** as the **Real Password** is typed in.

**NOTE:** Because the software links the real and encrypted passwords, typing in the real password always generates the same encrypted password.

4. Make a record of the user login and both passwords.
5. Click the **Clear** button to enter the next Cityworks user.
6. Follow steps 2-5 to generate a list of logins and passwords for all Cityworks users.
7. Enter the **Encrypted Password** for each user's login when creating the user in the database system.
8. Give the user the login and real password to use when logging in to Cityworks.

## Employees

The **Employees** function is the only one that may be accessed as a Cityworks database administrator or a Cityworks domain administrator. It is the same in either location, except that custom fields, employee skill sets, and dynamic cost codes must be set up by the domain administrator. Once set up, these fields may be populated from either location. If desired, employee records may also be created for departments and contractors. A single employee may belong to multiple domains as long as the login is different for each domain.

The **Groups** in the **Domain Groups** list is set up by the Cityworks domain administrator in **Domain Groups**. Once employees have been added, they may be quickly added to groups using the **Domain Groups** function. A single employee may also be added to all the groups to which he/she belongs on the **Employees** tab by checking the box in front of all applicable groups.

**NOTE:** *If employees are added using the Cityworks Data Template **EmployeeLeaf**, the employees must still be assigned to the applicable group(s).*

Many details about the employees can be listed on the tabs and others can be tracked using custom fields. The tabs most frequently needed are on the left and those that are accessed mostly during the initial setup have been placed on the right.

## Employees Tab

The **Employees** tab contains most of the employee's information, including phone numbers, email, job title, groups, custom fields, and various pay rates for overtime, holiday, etc. Existing information can easily be updated here by making the change(s) and clicking the **Save** button.

Rates are used to add labor costs to service requests and work orders. They can also be used in searches and reports. To maintain privacy, rates may also be set up by group type and view permissions may be restricted. In addition to the rates listed, specialized rate types are available. Cost codes are customized rates as defined by the organization. Job codes, which pay employees a certain rate according to the job type, can override the cost codes. These dynamic rates are set up on the **Cost Codes** or **Job Codes** tab found on the **Codes** window under **Others**.

**NOTE:** *See the sections in on [Cost Codes Tab](#) and [Job Codes Tab](#) for information on setting up customized rates.*

Employees

Current Domain: KSM

Employees Skills Load Employees Inactive Employee Search Desktop Event Layers

Existing Employees

Last Name	First Name	M.I.	Login Name	Is Active	Title
PAUL	EVAN		vWVTPTEC...	Y	vWVTP Technici...
PAYNE	KEN		WTTECH02	Y	Water Technician I
PENA	RON		vWVTPTEC...	Y	vWVTP Technici...
PEREZ	BILL		vWMLABR11	Y	vWastewater La...
PERKINS	DONALD		vWMLABR03	Y	vWastewater La...
PERRY	RICKY		vWMLABR18	Y	vWastewater La...

General Information

Field	Value
M.I.	
Work Phone	555.555.5555
Email	CQCSTESTING...
Pager	
Title	Public Works/Ut...
Organization	
Hourly Rate	\$49.75
Image	
Is Active	Y
Map Service Id	1
Active Directory ...	

Domain Groups

Groups

- AIRPORT
- CITY CLERK
- CITY MANAGER
- CODE ENFORCEMENT
- ELECTRIC
- FORESTRY
- GIS
- GUEST
- INSPECTIONS
- NATGAS

Custom Fields

Field Name	Value
EMERGENCY C...	PwAdmin
CONTACT PHONE	8015232751

Save Clear Delete

Regular Rates

Percent  Update

Fixed

Category	Type	Rate
Benefits	PERCENT	5.00
Holiday	PERCENT	100.00
Other	PERCENT	0.00
Overhead	PERCENT	0.00
Overtime	PERCENT	50.00

Attachments

Add Remove

Attachment
C:\Employee\PwAdmin\W4Form.txt

v2012

1. Look over the fields listed in the **Field Value** table to see if any other information is tracked by the organization.

**NOTE:** You can add any additional fields desired in **Custom Data Fields** under **Others**. See [Custom Data Fields](#) for detailed information.

Custom Data Fields

Tables Custom Asset

Tables: EMPLOYEE Field Name: MAILING ADDRESS Field Type: VARCHAR Code Type: Use Code (selected) Use Description

Default Value: [ ] Field Visible: [x] Field Required: [x] Save Delete

Field Name	Field Type	Visible	Required	Code Type	Code/Desc
DATE OF BIRTH	DATE	Y	N		
EMERGENCY CONTACT	VARCHAR	Y	N		CODE
HIRE DATE	DATE	Y	N		

2. Add employee information by one of the following three methods.

- If an employee list already exists, switch to the **Load Employees** tab and follow the instructions listed there. See [Importing Data](#) or [Load Employees Tab](#) for more information.

Employees

Current Domain: PW

Employees Skills Load Employees Inactive Employee Search Desktop Event Layers

An import file must be a delimited text file with the first row containing delimited field names. Double-click the text box to browse to an import file. Specify the field delimiter, then click the load button to load the file into the list view. Select the employee(s), domain and group name(s), click save to update the database. Selected saves only the selected employees, while Save All saves all employees listed in the list view.

Delimited By: Comma (selected) Tab Other

Import File: W:\Garth\arrington\CW Import Files\Employees.txt Load

- If no employee list exists, use the Microsoft Excel **CityworksDataTemplate.xls** to type in the employee information (or export to a file and have another employee populate the spreadsheet). See [Cityworks Data Template](#) for more information.
- To add a single employee or update an employee's information, use the **General Information** box on the left center pane of the **Employees** window. The required fields include **Last Name** and **Is Active**. See [Field Value Tables](#) for more information.

General Information	
Field	Value
Employee ID	PWADMIN
Login ID	PWADMIN
Last Name	PWADMIN
First Name	
M.I.	
Work Phone	555.555.5555
Email	CQCSTESTING...
Pager	
Title	Public Works/Ut...
Organization	
Hourly Rate	\$49.75
Image	
Is Active	Y
Map Service Id	1
Active Directory ...	

V2012

- **Employee ID**—A client-site ID, such as a payroll number, up to 15 characters in length.
- **Login ID**—Used to log in to Cityworks; up to 30 characters, usually assigned by the database administrator or IT staff who assign Windows logins to match the schema used by the organization, e.g., first initial with the last name.
- **Last Name**—Up to 30 characters long, apostrophes allowed.
- **First Name**—Up to 15 characters.
- **M.I.** (Middle Initial)—2 characters allowed.
- **Work Phone**—Up to 24 characters.
- **Email**—Required for **Submit To** employees who are set up to automatically receive emails about requests or work orders; maximum 250 characters.
- **Pager**—Or other phone number, such as cell or home.
- **Title**—Job title, position, or classification; up to 40 characters.
- **Organization**—Or department.
- **Hourly Rate**—For tracking labor costs; may be actual rate, an average based on job classification, a fully-burdened rate that includes benefits, overhead, etc. or any variation. If nothing is typed in the space, the field defaults to \$0.00 when the employee is saved.
- **Image**—Type in the network path to an image file or double-click in the field to open a browser box and browse to the desired image file to load the path in the field and load the image in the blank space on the right pane.
- **Is Active**—Required field: **Y** for active, **N** for inactive. Inactive employees are listed in gray in the **Existing Employees** list in Designer and are not listed in Cityworks selection lists. Setting an employee to inactive, instead of deleting them, preserves the historical data.
- **Map Service Id**—Select from the dropdown menu to associate the employee to a map service.

**NOTE:** Employees may also be associated to a map service under **Server Setup > GIS Services**.

- **Active Directory Domain**—Enter the domain to use for Active Directory (AD) authentication to manage network administration and security through a central location. Internet Explorer (IE) must be utilized to use the AD Domain. Instruct IE to send the credentials via an Internet Information Services (IIS) setting. In the Web.config file for Server AMS/PLL (...inetpub\wwwroot\<site\_alias>\WebSite), set the authentication mode from “Forms” to “Windows” as shown below:

**NOTE:** Don't set the Web.config file at the machine level, or all sites are subject it.

```
...
<system.web>
...
  <authentication mode="Windows"/>
...
</system.web>
```

There is another way to configure Windows authentication; however, this is not required if the Web.config file is changed.

- Start IIS
- Right-click your application's virtual directory and then click **Properties**.
- Click the **Directory Security** tab.
- Under **Anonymous access and authentication** control, click **Edit**.
- Make sure **Integrated Windows authentication** is the only selected checkbox.

When using AD Domain, the software skips the password portion (ignoring the value set in the encrypted PASSWORD field of the CWSVRMEMBERSHIP table) so those with AD passwords that change every 'x' number of days are not affected.

1. Check the **Domain Groups** to which this employee belongs.

**NOTE:** Employees may also be assigned to domain groups under **Cityworks Setup > Domain Groups**.

2. Populate any **Custom Fields** by double-clicking in the **Value** field. A box for entering in the information opens, such as **Choose a Date** or **Enter Value**. Use it to enter the **Value** in the field.

Some **Custom Fields** may be required by the organization before the employee information can be saved. A **Required Value** information box opens to ask the user to enter a value for the listed required custom field if a required field hasn't been populated. If multiple custom fields are required, a message will open for each one in the order listed until all required fields are populated.

3. Click the **Save** button.
4. If desired, set the **Regular Rate** by clicking on the **Category** in the list to load the information into the top of the pane, set the radio button option to **Percent** (default setting based on the **Hourly Rate**) or **Fixed** which adds an additional amount to the hourly rate, and click the **Update** button for each rate.

**NOTE:** If these rates do not match those used by the organization, use cost codes instead and leave these **Regular Rates** blank. See the section on [Assign Cost Codes Tab](#) for more information.

Regular Rates

Percent
  Fixed

Category	Type	Rate
Benefits	PERCENT	25.00
Holiday	PERCENT	50.00
Other	PERCENT	10.00
Overhead	PERCENT	20.00
Overtime	PERCENT	50.00
Shift Differential	FIXED	\$0.75
Stand By	PERCENT	0.00

- **Benefits**—Pay for additional items an employer may provide, such a health insurance, life insurance, retirement plan, etc.
- **Holiday**—Pay rate for working on holidays.
- **Other**—Use for any code not already included in the list.
- **Overhead**—Use for any overhead costs that are added to billable work for other departments, etc.
- **Overtime**—Pay rate for working more than 40 hours per week; generally time and a half.
- **Shift Differential**—Additional pay for working swing, graveyard, or other shift.
- **Stand By**—Additional pay for being on-call for emergencies during the evenings or weekends.

The organization sets up the rate schedule to match their desired method of calculating rates. There are two different ways of setting rates. For example, overtime may be selected in addition to the regular rate for the total labor cost on a work order. However, if all of the cost is considered overtime, uncheck **Regular**, which is checked by default, and check **Overtime** on the labor pane.

**NOTE:** Use the **Cost Code** tabs if additional rates are needed.

Search By **GROUP NAME** **WATER CREW**

Name	Title	Employee SID
GUNTER, BOBBY D	Water Supervisor	4031
ROBERTS, GUY F	Water Maintenance W...	5762
WADE, FRANK D	Water Maintenance W...	5764

Start Date: 02/04/2006 08:00  Actual  
 Hours: 3.00  Estimated  
 Finish Date: 02/04/2006 11:00  Employee  
 Description: finish repairing main Saturday  Contractor  
 Account:

Regular  
 Overtime  
 Holiday  
 Benefit  
 Stand By  
 Shift Differential  
 Overhead  
 Other

[Add](#) [Clear](#) [Remove](#)  
[Switch Entities/Tasks](#)

Total Actual: \$435.36

Name	Hours/Units	Start Date	Finish Date	RegularCost	OvertimeCost
GUNTER, BOBBY D	3.50	2006-02-03...	2006-02-03 ...	126.00	0.00
ROBERTS, GUY F	3.50	2006-02-03...	2006-02-03 ...	33.25	0.00
WADE, FRANK D	3.50	2006-02-03...	2006-02-03 ...	50.75	0.00
GUNTER, BOBBY D	3.00	2006-02-04...	2006-02-04 ...	108.00	19.44
ROBERTS, GUY F	3.00	2006-02-04...	2006-02-04 ...	28.50	10.26
WADE, FRANK D	3.00	2006-02-04...	2006-02-04 ...	43.50	15.66

- If desired, add any desired attachments for the employee, for example, a resume, certificate, W4 form (Employee's Withholding Allowance Certificate), etc. Drag and drop the file(s) into the field or click the **Add** button in the **Attachments** pane on the lower right to open a browser box for navigating to the file.

**Attachments**

Add  Remove

Attachment
\\Datahead\ClientServices\Documentation\Resume Brian Haslam.doc

Navigate to the desired file in the **Select attachment file(s)** box and double-click on the file (or select and click **Open**) to load the path.

## Skills Tab

The **Skills** tab allows the organization to track any skill sets, certification, or other specialized training an employee may have received.

1. Populate the **Codes** list for **AEMPSKIL** (or have the Cityworks domain administrator do it). The **Codes** list is found in **Others > Codes** under the **Description** of **Employee Skill Sets**. Enter the **Code** and **Description** on the bottom right pane and click the **Save** button. Add all desired codes in this manner.

The screenshot shows the 'Codes' application window. At the top, the 'Current Domain' is set to 'PWV'. Below this are three buttons: 'Add/Modify', 'Import', and 'CCTV'. The 'Asset Group' is set to 'AIR' and the 'Code Format' is 'Codes and Descriptions'. The main area is divided into two panes. The left pane, titled 'Code Types', contains a list of code types with 'AEMPSKIL' selected. The right pane, titled 'Codes and Descriptions', contains a table of codes and their descriptions. At the bottom, there are two input fields for 'Code' and 'Description' with 'AEMPSKIL' and 'Employee Skill Sets' respectively, and buttons for 'Save' and 'Clear'. A second set of input fields at the bottom right shows 'CWADMIN' and 'Cityworks Administration Training' with 'Save', 'Clear', and 'Delete' buttons.

Code	Description
ACUST	Custom Field Codes
ADEPTNUM	Account Dept Num
ADISCOUNT	Discounts Available
ADISTRCT	District (Server)
ADISTRCT	District (Server)
AEMPSKIL	Employee Skill Sets
AEQUIPSTOR	Equipment Storage Areas
AFLEET	Fleet Class Codes
AFUNDNUM	Account Numbers
AIANDI	I&I Source
AMATACT	Material work activity
AORGCODE	Organization Code
APIEMAT	Pipe Material
APIPEYTYPE	Pipe Type
APRIORIT	Priority
APROBCAT	Request Problem Category
APSOURCE	Permit Source
ASRMRGT	Storeroom Requisition Type
ASSOACT	SSO Action Taken
ASSOLOC	SSO Cause Location
ASSOREA	SSO Cause
ATRAN	Training and Certificates

Code	Description
BA	Bachelor of Arts Degree
BS	Bachelor of Science Degree
CAC	Certified Asbestos Consultant
CDL	Commercial Driver's License
CPT	Certified Personal Protective Equipment
CSE	OSHA Confined Space Entry Certificate
CWUT	Cityworks User Training
DOHAZ	Certified DOT HAZMAT Technician
EST	Certified Electrical Safety Technician
FRKLFT	Forklift Operator Safety Training
HAZMAT	Hazardous Materials Handling Certification
HAZWOPER	Certified Haz Waste Operator
LFILL	Landfill Operator Certification
MBA	Master of Business Administration
MS	Master of Science degree
OSHA	OSHA Safety Certification
PHD	Doctorate Degree
SEM	Certified Emergency Management Spec
WW	Certified Wastewater Operator
WWO	Certified Water Works Operator
WWTP	Municipal WWTP Operator Certification

2. Switch back to **Employees** (under **Administration** or **Cityworks Setup**), click on the **Skills** tab, and select an employee from the dropdown.

**NOTE:** If necessary, change the **Current Domain** at the top to list the desired employees.

Employees

Current Domain: PW

Employees Skills Load Employees Inactive Employee Search

Employee: MILLER, SUSAN J

Description: Cityworks User Training

Class Title: Service Requets Provided by: Azteca Systems, Inc.

Instructor: Steve Thomas Certification:

Certification Date:  4/11/2006 Expiration Date:  9/23/2010

Save Clear Remove

Employee Skills

Code	Description
BS	Bachelor of Scie

Defined Skills

Code	Description
BA	Bachelor of Arts Degree
BS	Bachelor of Science Degree
CAC	Certified Asbestos Consultant
CDL	Commercial Driver's License
CODE	Description
CPT	Certified Personal Protective Equip...
CSE	OSHA Confined Space Entry Certifi...
CWADMIN	Cityworks Administration Training
CWST	Cityworks Server Training
CWUT	Cityworks User Training
DOTHAZ	Certified DOT HAZMAT Technician
EST	Certified Electrical Safety Technician
FRKLFT	Forklift Operator Safety Training
HAZMAT	Hazardous Material License
LFILL	Landfill Operator Certificate
MBA	Master of Business Administration

3. Select the applicable **Code** from the list to load the **Description**.
4. Type the applicable information in Class Title, Provided by, Instructor, and Certification.
5. If applicable, check the **Certification Date** and/or **Expiration Date** and type in the date or select using the dropdown to open the calendar.

**TIP:** The checkbox in front of the date activates the date field and can be automatically checked by clicking the dropdown arrow to select the date.

6. Click the **Save** button to save the information to the list on the right pane and clear the fields.

Scroll across to view all the fields:

- **Code**
- **Description**
- **Class Title**

- **Instructor**
- **Provided by**
- **Certification**
- **Class Date**
- **Expiration Date**

Employee Skills						
Code	Description	Class Title	Instructor	Provided by	Certification	Class Date
BS	Bachelor of Science Degree			University of Utah		4/28/1991
CWUT	Cityworks User Training	Service Requests	Steve Thomas	Azteca Systems, Inc.		4/11/2006

7. Add each skill for this employee by following steps 4-7.
8. Change the employee using the dropdown selection at the top of the left pane and add skill sets for the other employees in the same manner.

**NOTE:** The employee selection listed is for the **Current Domain** shown above the tabs which may be changed for administrators who are working with more than one domain.

The **Clear** button clears the fields. The **Remove** button removes the selected skill(s) for the employee from the list and in the database. No confirmation box opens.

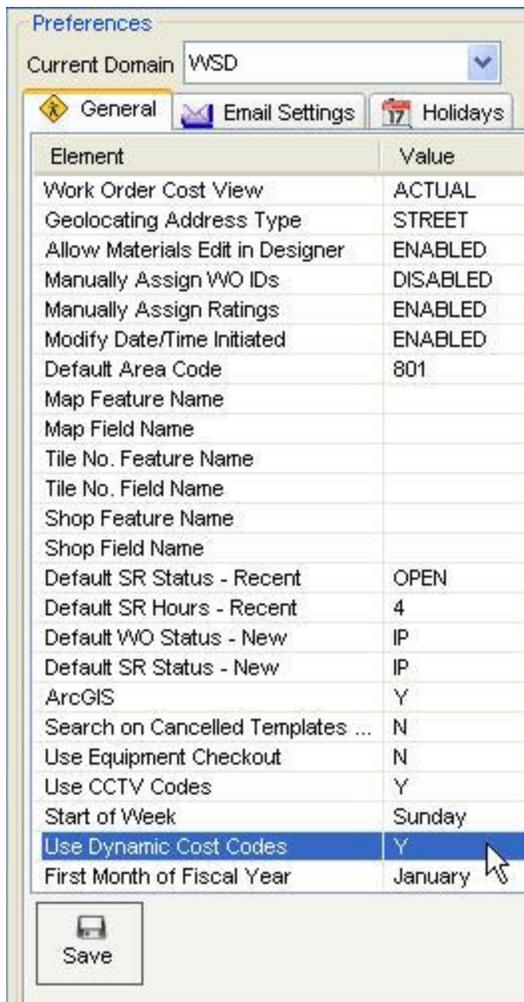
## Assign Cost Codes Tab

The **Assign Cost Codes** tab is used to link the employee(s) to customized, dynamic labor rates created on the **Cost Codes** on the **Codes** window found under **Others**. The cost codes are defined for the employee by entering the percent or fixed amount for the rate. If the domain is using the **Regular Rates** found on the **Employees** tab, skip this section as only one rate type may be used.

**IMPORTANT:** At this time, dynamic cost codes do not support asset- or task-based costs. Do not use dynamic costs if labor will be associated to assets or tasks.

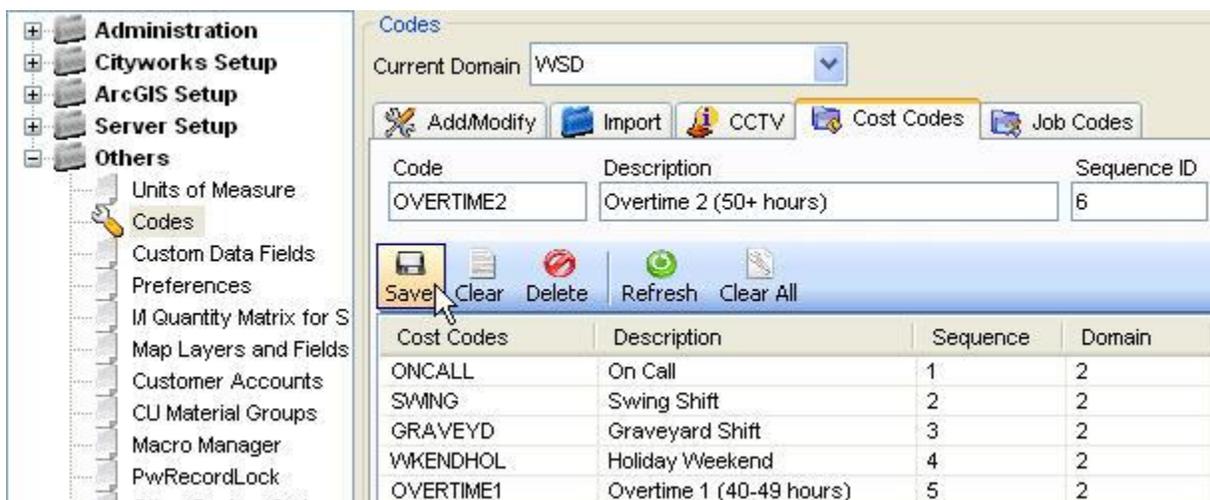
1. Under **Others > Preferences**, set the **Use Dynamic Cost Codes** option to **Y** to activate dynamic costs and display the **Assign Cost Codes** tab on the **Employees** window.

**NOTE:** Selecting the dynamic cost codes activates the **Cost Codes** and **Job Codes** tabs on the **Codes** window and lists the defined codes on the **Employees > Assign Cost Codes** tab and on the **Work Order Templates > Labor** tab.



2. Switch to the **Codes** window under **Others** and open the **Cost Codes** tab to define the desired codes.

**NOTE:** See the [Cost Codes Tab](#) section for detailed information on how to populate these codes.



- Return to **Employees** under **Cityworks Setup** and switch to the **Assign Cost Codes** tab.

Employees

Current Domain WSD

Employees Skills Assign Cost Codes Load Employees Inactive Employee Search Des

Last Nam...	First Name	M.I.	Login Na	Cost Codes	Description	Sequence	Domain
BAXTER	CHARLIE		CBAXTEF	ONCALL	On Call	1	2
BEEMAN	AMY		ABEEMAI	SWING	Swing Shift	2	2
CHARLES	RYAN		RCHARLE	GRAVEYD	Graveyard Shift	3	2
GUNTER	BOBBY	D	BGUNTEF	WKENDHOL	Holiday Weekend	4	2
HASLAM	BRIAN	L	BHASLAI	OVERTIME1	Overtime 1 (40-49 hours)	5	2
HENRY	WILL		WHENRY	OVERTIME2	Overtime 2 (50+ hours)	6	2
KLEIN	ADAM		AKLEIN				
LARSEN	FREDERICK	J	FLARSEN				
LIEBER	LAURA		LLIEBER				
LONG	DEREK		DLONG				
LUCKEY	KATE		KLUCKEY				
LYONS	JAMES		JLYONS				

Percent  Fixed Rate

Cost Codes Assigned to: **BAXTER, GUNTER, LARSEN**

Employee	Cost Codes	Description	Rate	Method	Domain
BAXTER	WKENDHOL	Holiday Weekend	75.00	PERCENT	2
GUNTER	WKENDHOL	Holiday Weekend	75.00	PERCENT	2
LARSEN	WKENDHOL	Holiday Weekend	75.00	PERCENT	2
BAXTER	OVERTIME1	Overtime 1 (40-49 hours)	50.00	PERCENT	2
GUNTER	OVERTIME1	Overtime 1 (40-49 hours)	50.00	PERCENT	2
LARSEN	OVERTIME1	Overtime 1 (40-49 hours)	50.00	PERCENT	2

- Select the employee(s) to which the cost code applies.
- Select the **Cost Code**.
- Select the radio button option for **Percent** or **Fixed** and enter the **Rate**.
- Click the **Add** button to list the information below and save to the database.

Once the cost codes have been assigned, the **Dynamic Cost Codes** box on the lower left pane of the **Employees** tab displays the cost codes for the selected employee.

Dynamic Cost Codes

Percent   Update  
 Fixed

Employee Cost Codes	Description	Rate	Method
GRAVEYD	Graveyard Shift	30.00	PERCENT
OVERTIME1	Overtime 1 (40-49 hours)	50.00	PERCENT
OVERTIME2	Overtime 2 (50+ hours)	65.00	PERCENT
SWING	Swing Shift	25.00	PERCENT
WKENDHOL	Holiday Weekend	75.00	PERCENT

## Load Employees Tab

The **Load Employees** tab allows employee information already stored in a file to be imported for use into Cityworks.

**NOTE:** The load process is briefly described in step 3 under [Employees Tab](#), on the tab itself, and under [Importing Data](#).

Employees

Current Domain: PW

Employees  Skills  Load Employees  Inactive Employee Search  Desktop Event Layers

An import file must be a delimited text file with the first row containing delimited field names. Double-click the text box to browse to an import file. Specify the field delimiter, then click the load button to load the file into the list view. Select the employee(s), domain and group name(s), click save to update the database. Selected saves only the selected employees, while Save All saves all employees listed in the list view.

Delimited By:  Comma  Tab  Other

Import File: W:\Garth\larrington\CW Import Files\Employees.txt  Load

EMPLOYEEID	FIRSTNAME	MIDDLEINITIAL	LASTNAME	TITLE	PAGER	WOF
CCADMIN01	NICOLE	A	JOHNSON	CALL CENTER ADMINISTRATOR		555.5
CCTECH01	DAVID	H	HESBY	CALL CENTER TECHNICIAN		555.5
CCTECH02	CYNTHIA	R	MOORE	CALL CENTER TECHNICIAN		555.5
ELADMIN01	GEOFF	W	GIBSON	ELECTRIC ADMINISTRATOR		555.5
ELECINSP01	DONALD	I	HEARRELL	ELECTRIC INSPECTOR		555.5
ELTECH101	SCOTT	Z	ROHER	ELECTRIC TECHNICIAN I		555.5
ELTECH102	GUS	P	JOHNSON	ELECTRIC TECHNICIAN I		555.5

Domains:

Domain
PW
WSD

Groups:

Groups
SUPERVISOR
MAINTENANCE WORKER
MAINTENANCE WORKER 2
WATER CREW
SEWER CREW 1
STORM CREW
CALL TAKER
STREET CREW 1
ELECTRIC CREW 1

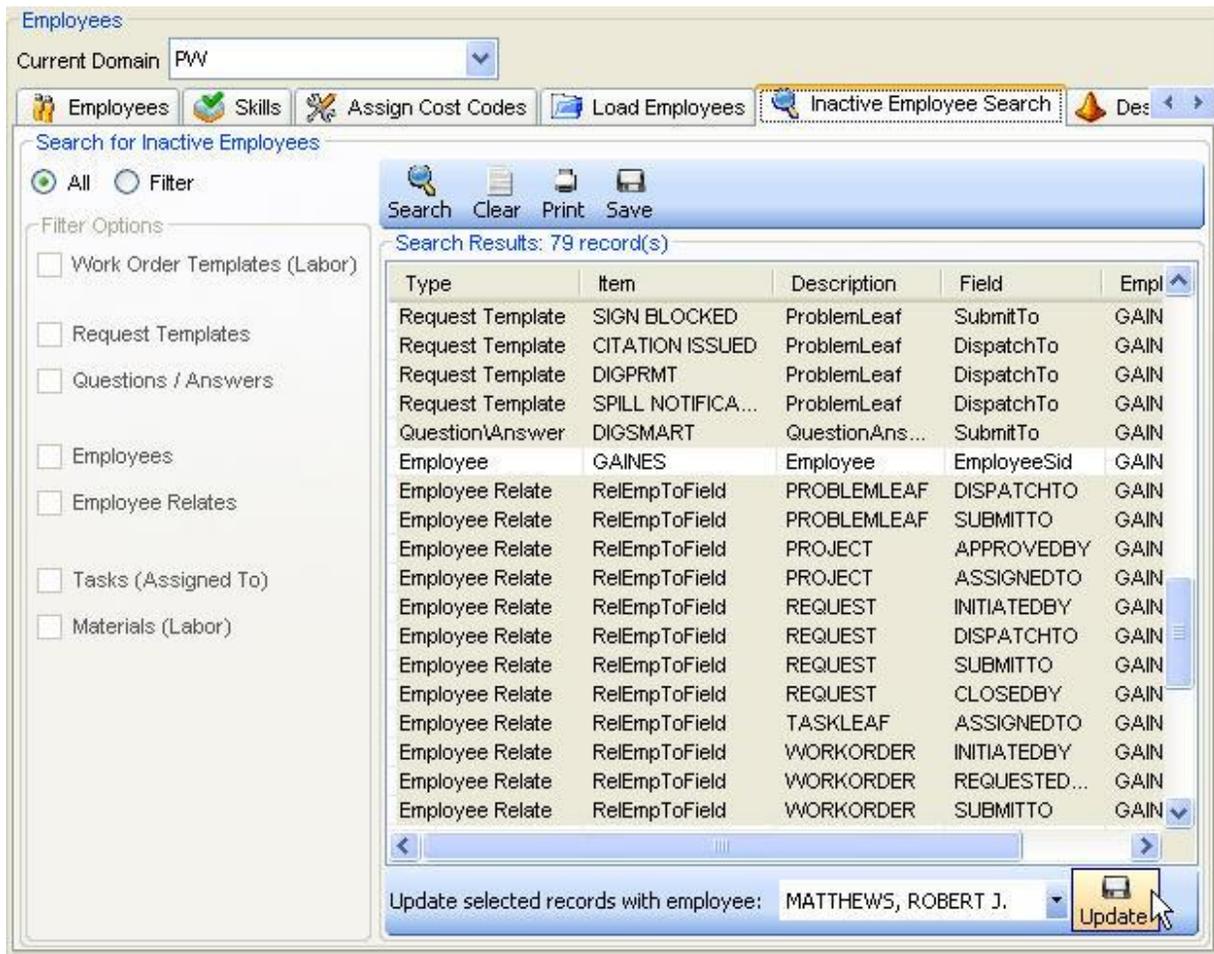
Selected  
 Save All  
 Remove

Once the information is loaded, the employee groups may be assigned by selecting the employee(s), the domain, and the group(s). Click the **Selected** button to add each selection to the database (or click the **Save All** button to save all the employees and use the **Domain Groups** function to assign the employees).

## Inactive Employee Search Tab

The **Inactive Employee Search** tab allows for various searches on inactive employees. An inactive employee may then be replaced with an active employee who has permission to perform the selected responsibilities but only for certain types of records. See step 5 for more details.

1. Switch to the **Inactive Employee Search** tab and select the desired radio button option for **All** records or **Filter**.



2. If **Filter** is selected, check the desired box(es) in **Filter Options**.

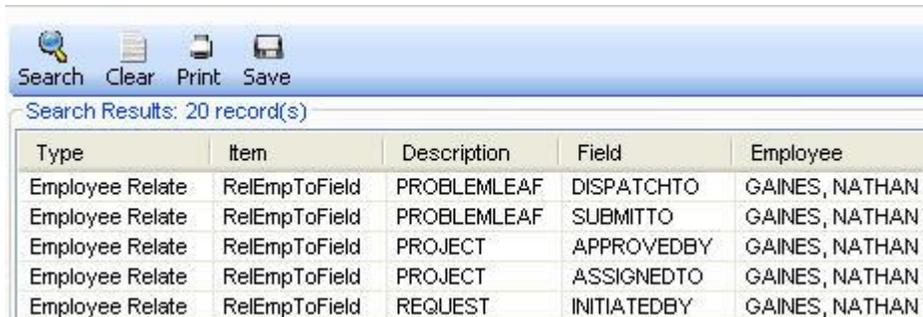
- **Work Order Templates (Labor)**—Lists all work order templates with an inactive employee listed in the labor selection.

Type	Item	Description	Field	Employee
Work Order Template Labor	RROAD: Resurface	LaborCostTmp	LaborSid	GAINES, NATHAN
Work Order Template Labor	RROAD: Sweep	LaborCostTmp	LaborSid	GAINES, NATHAN
Work Order Template Labor	EVENT: Traffic Barricades	LaborCostTmp	LaborSid	GAINES, NATHAN

- **Request Templates**—Lists all request templates having an inactive employee as a **Submit To** or **Dispatch To** person.
- **Questions / Answers**—Lists inactive employees who are the **Submit To** or **Dispatch To** person based on a request template’s question-and-answer series.
- **Employees**—Lists all inactive employees in the domain.
- **Employee Relates**—Lists all the dropdown selections in the database tables where an inactive employee is found.
- **Tasks (Assigned To)**—Lists inactive employees associated with a task on a work order template.

Type	Item	Description	Field	Employee
WOTempTask	PARCELS: New Site Notification	ASSETS (4059)	AssignedTo	GAINES, NATHAN
WOTempTask	PARCELS: Plan Review - Cross ConnectionMPP	PLNR'WW (4067)	AssignedTo	GAINES, NATHAN
WOTempTask	PARCELS: Plan Review - Cross ConnectionMPP	RVW'LTR (4068)	AssignedTo	GAINES, NATHAN

- **Materials (Labor)**—Lists inactive employees associated with labor when assembling a material.
3. Click the **Search** button to list the results. The total number of records is listed under the buttons at the top of the results list. Generally the Cityworks table is listed in the **Description** column but may also be found under **Type** or **Item**.



4. If desired, the results list can be printed or saved, by clicking the **Print** or **Save** button.

**NOTE:** The list prints in a landscape format with an additional column added for **Employee SID**.

Inactive Employee Search 3/13/2008 Printed on: 3/13/2008 4:10:58 PM

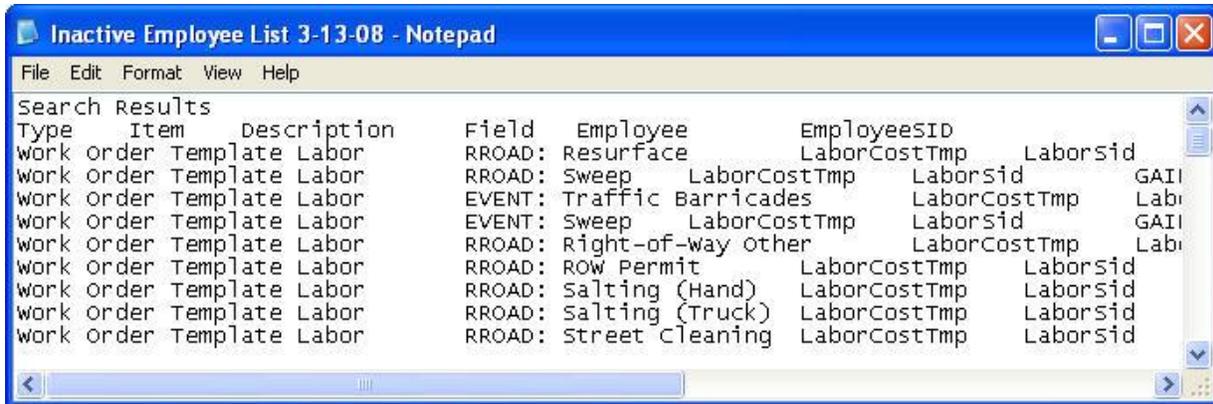
Type	Item	Description	Field	Employee	EmployeeSID
Work Order Template Labor	RROAD: Resurface	LaborCostTmp	LaborSid	GAINES, NATHAN	4009
Work Order Template Labor	RROAD: Sweep	LaborCostTmp	LaborSid	GAINES, NATHAN	4009
Work Order Template Labor	EVENT: Traffic Barricades	LaborCostTmp	LaborSid	GAINES, NATHAN	4009

Clicking **Save** opens a dialog box. Type in the **File Name** and click **Save**.

Click **Yes** when the message box opens to create the file (or replace an existing file if a text file with that name and path already exist).

A message box opens to confirm that the file was saved and details where it is found.

The file is saved as a text document and opens in Notepad.



5. If desired, you can replace an employee with another one. To do this, select the records from the search to change, select the employee from the selection list, and click the **Update** button at the bottom of the window. These records may be updated on the **Inactive Employee Search** tab.

- **Request Templates: Submit To or Dispatch To**
- **Question/Answer: Submit To or Dispatch To**
- **Work Order Tasks: Assigned To**

If no records are selected, a **Select Record** message opens asking the user to select a record to update first.

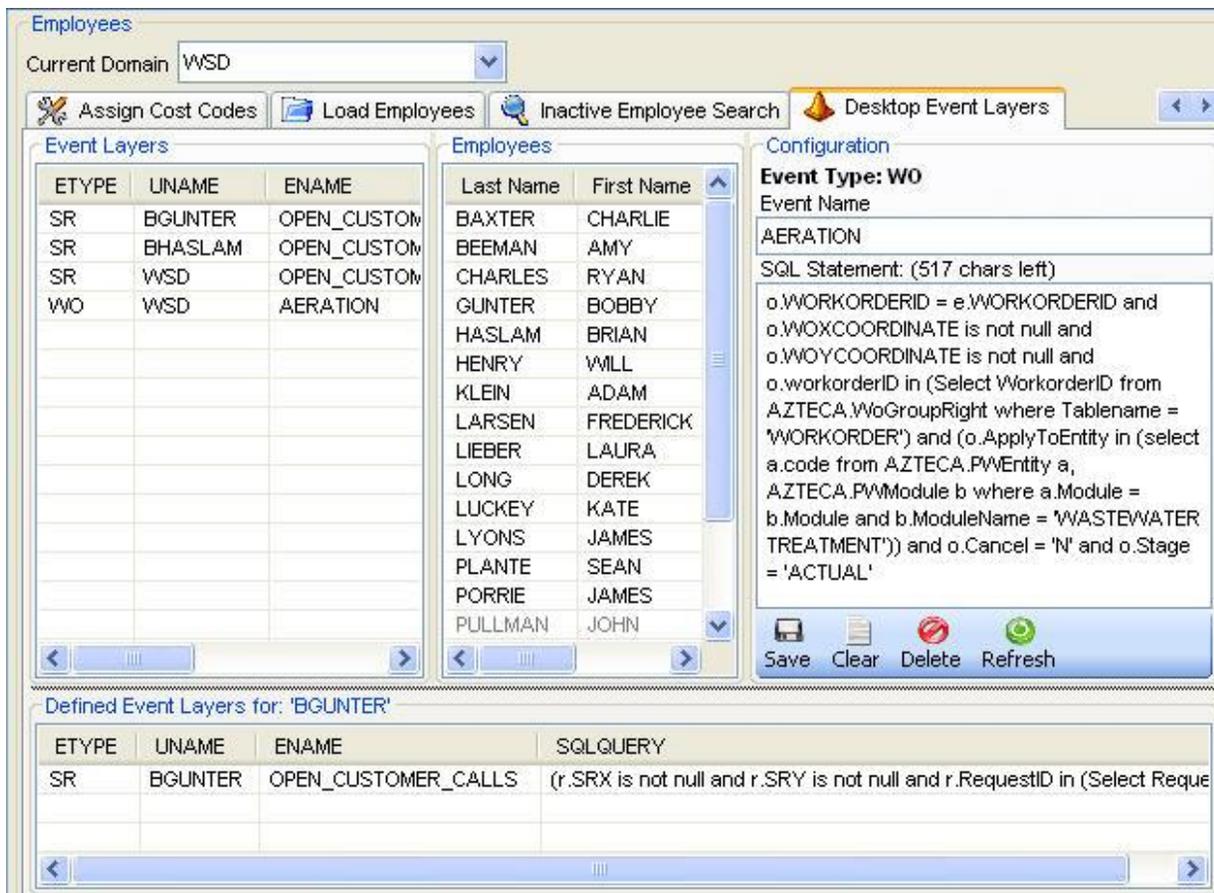
If a record cannot be updated, an **Update Employee** message opens to alert the user as to what information cannot be updated using this function. Make a note of these and update them on their respective forms to update the employee information.

## Desktop Event Layers Tab

The **Desktop Event Layers** tab allows the Cityworks domain administrator to create new event layers and share them with other users in the domain or copy existing event layers from one user to another.

1. Switch to the **Desktop Event Layers** tab and select the desired **Event Layers** to copy.

**NOTE:** If only one event layer is selected, the associated **SQL Statement** loads in the **Configuration** box on the right.



2. Select the employee(s) from the **Employees** box to add the event layer(s) to the user's event layer selection list in Cityworks.

**NOTE:** The **Employees** list is alphabetical by first name. If desired, click in the **Last Name** field to sort by surname. When an employee is selected, any defined event layers for this employee load on the lower pane.



3. To create a new event layer: Type in the **Event Name**, maximum 30 characters, and **SQL Statement**, a maximum of 900 characters with the number of characters remaining displayed in parenthesis above the box.

**NOTE:** No checking is done to validate the **SQL Statement**.

4. Click the **Save** button to save the event layer for the selected users and list them in the **Event Layers** box.





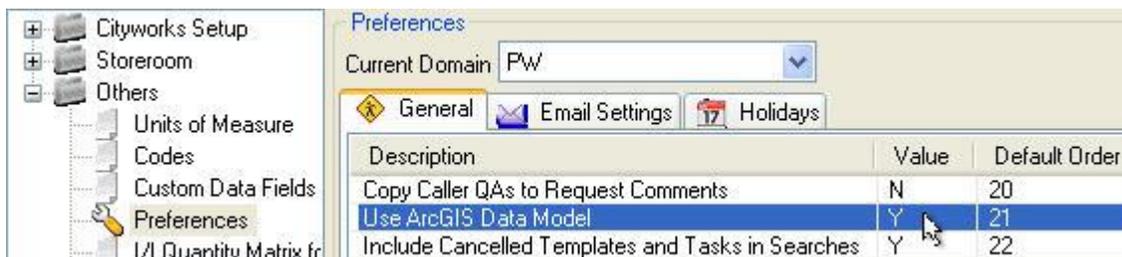
## Cityworks Setup

Most of the Cityworks functionality for service requests and work orders is done in **Cityworks Setup**. Domain groups are defined and privileges assigned. Templates for service requests, work orders, custom fields, comments, and custom inspections are created. Tree structures are built for requests, contractors, equipment, materials, and tasks. Permit and inspection information may be added and template security assigned.

In 2012.1, the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool.



**IMPORTANT:** When accessing the Designer domain functions for the first time with a new database, the Cityworks domain administrator must first go to **Others > Preferences** and click **Save** to set ArcGIS as the data model. If using ArcView 3.x, set the **Use ArcGIS Data Model (#21)** value to **N** (no) by double-clicking (or pressing the space bar) in the **Value** field before saving.



The following functions are found in **Cityworks Setup**.

- **Domain Groups**—Defines the Cityworks employee groups for managing security in the domain.
- **Employees**—Sets up the basic employee information, including labor rates and skill sets.

**NOTE:** The **Employees** window is the same here as in **Administration**. It is the only function available to both the Cityworks database administrator and Cityworks domain administrator. It is discussed in full detail under [Employees](#).

- **Request Templates**—Sets up the request type with all the accompanying question-and-answer series and default settings for submitting and dispatching personnel, duration, etc.

- **Work Order Templates**—Sets up all the work order information by type, including all the default settings for priority, work months, duration, cycles, tasks, labor, materials, equipment, printing, security, and budget plans.
- **Custom Field Templates**—Defines custom fields for requests and work orders.
- **Contractors**—Provides basic information about contractors for work orders, such as how they are paid, what they supply, etc.
- **Equipment**—Provides information about the equipment and its cost for work orders.
- **Materials**—Provides information about the materials used for work orders with costs, minimum quantity to keep on hand, parts, etc.
- **Tasks**—Defines all the possible tasks or steps that can be used to complete work orders, including defaults for assigning the task and estimated time to complete.
- **Permits**—Defines permit information, including cost and source, to add this cost to a work order.
- **Custom Inspection Templates**—Creates templates for custom inspections.
- **Inspection Custom Observations**—Defines checklist questions for custom inspections with the answer format.
- **Predefined Comments**—Sets up groups of possible comments for requests or work orders by category to facilitate data entry on handheld devices or standardize the responses.
- **Template Security**—Assigns Cityworks security to domain groups for request and work order templates. In 2012.1, the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool.
- **Employee Relates**—Assigns employees access to Cityworks functions and defines who is in the Cityworks dropdown selection lists for various request, work order, and inspection fields.
- **Work Order Template Classes**—Allows automation in selecting work order templates based on an asset's attributes for a particular class of work when different tasks or procedures need to be followed.

## Domain Groups

**Domain Groups** defines the employee groups for the domain. These groups serve two functions in Cityworks.

- Define employee groups to facilitate adding labor to a request or work order by **Group Name** or **Keyword**.

**NOTE: Group Name or Keyword** loads all the employees in the group so the user can quickly select the applicable employees and add the labor hours.

- Set up the level for the group's access to GIS rights in Cityworks Anywhere and Cityworks Server applications.

Employees may belong to as many groups as desired. Cityworks is designed to have multiple groups for selection lists to facilitate data entry. If an employee belongs to multiple groups which are assigned different security privileges, Cityworks assigns the rights with the greatest access to the employee.

**NOTE:** Security privileges do not need to be set for groups used for selection lists who do not access Cityworks. Security is set using **Domain Groups**, **Template Security**, and **Employee Relates**.

1. Select the **Current Domain**.

The screenshot shows the 'Domain Groups' configuration window. At the top, 'Current Domain' is set to 'KSM'. The 'Groups' tab is selected, showing 'Cityworks Domain Groups'. On the left, there are fields for 'Name' (STREETS) and 'Description' (Streets Employees), along with 'Save', 'Clear', and 'Delete' buttons. Below that is the 'Anywhere/Server GIS Rights' section with a 'Level' dropdown set to 'View Only'. The 'Group Keywords' section has 'Add' and 'Delete' buttons and a list containing 'STREET' and 'STREETS'. The main area is 'Existing Groups', a list box with 'STREETS' selected. At the bottom, the 'Employees' section has 'Available Employees' and 'Assigned Employees' list boxes, with arrows between them for moving items.

2. Type in the **Name** and **Description** of the group (or select from the **Existing Groups** to update the information).
3. Click the **Save** button to save the group.
4. Click on the **Group Name** to activate the rest of the window.
5. Cityworks Anywhere or Server users may select the desired options in the **Anywhere/Server GIS Rights** box and click **Save**.

**NOTE:** The last selection made for **Anywhere/Server GIS Rights** determines which option is active.

- **View Only** for groups who will not be editing GIS data at any level and only viewing it.

- **Attributes** for groups who are allowed to edit only GIS attributes. In Anywhere, it would be on the **Cityworks Inventory Editor** form. In Server, it would be on the **Editor** form accessed via the **GIS Search** or work order **Assets** panel, as well as on the inspection **Assets** panel under **Editable Fields** (if configured).
  - **Geometry (Server Only)** for groups who are allowed to edit both GIS attributes and the map geometry.
  - **Activity (Server Only)** for groups who are allowed to only edit GIS attributes within a work activity, such as an inspection, and not in the **Editor** form.
6. If you are a Server user and use districts, check the box(es) in front of each applicable **District**.

**NOTE:** *District* is only visible for users connecting to a Server database.

7. Click the **Save** button to save the **Anywhere/Server GIS Rights** and **District** information.
8. Type a keyword in the **Group Keywords** pane and click the **Add** button to list them. Add as many keywords as desired.

**NOTE:** *The first three letters, other abbreviations, or acronyms may be used as keywords.*

9. Select the employee(s) from the list on the left who belong in the selected group and click the right arrow to move them into the group (or double-click on each employee to move them to the right).

An employee may also be added to a group by selecting the individual on the **Employees** tab of the **Employees** window and checking the box under **Domain Groups** for each applicable group.



## Employees

**Employees** is discussed as part of [Administration](#) since it is the only function available to both the Cityworks database administrator and Cityworks domain administrator. See [Employees](#) for full details.

## Request Templates

**Request Templates** sets up the categories and items for service requests, including questions for call takers to ask to generate the type of information needed for the inspectors. Request templates can also be created for frequently-asked questions to provide call takers with the necessary information and track the number of incoming calls for the subject. Cityworks does not contain any predefined request templates. A cloning function facilitates the set up by copying the information on all tabs to allow each organization the flexibility to completely customize the system to match their current procedures.

Request and problem are frequently used as interchangeable terms in Cityworks since most requests report on problems. Because many clients now use requests for additional items, Cityworks has moved from **Problem Templates** to **Request Templates** to more accurately reflect the openness of the system in tracking any type of information desired.

**NOTE:** Some field names in the **Request** table in the Cityworks database still refer to problem, such as **ProblemCode**, **ProbAddress**, **ProbCity**, **ProbZip**, and **ProbAddType**.

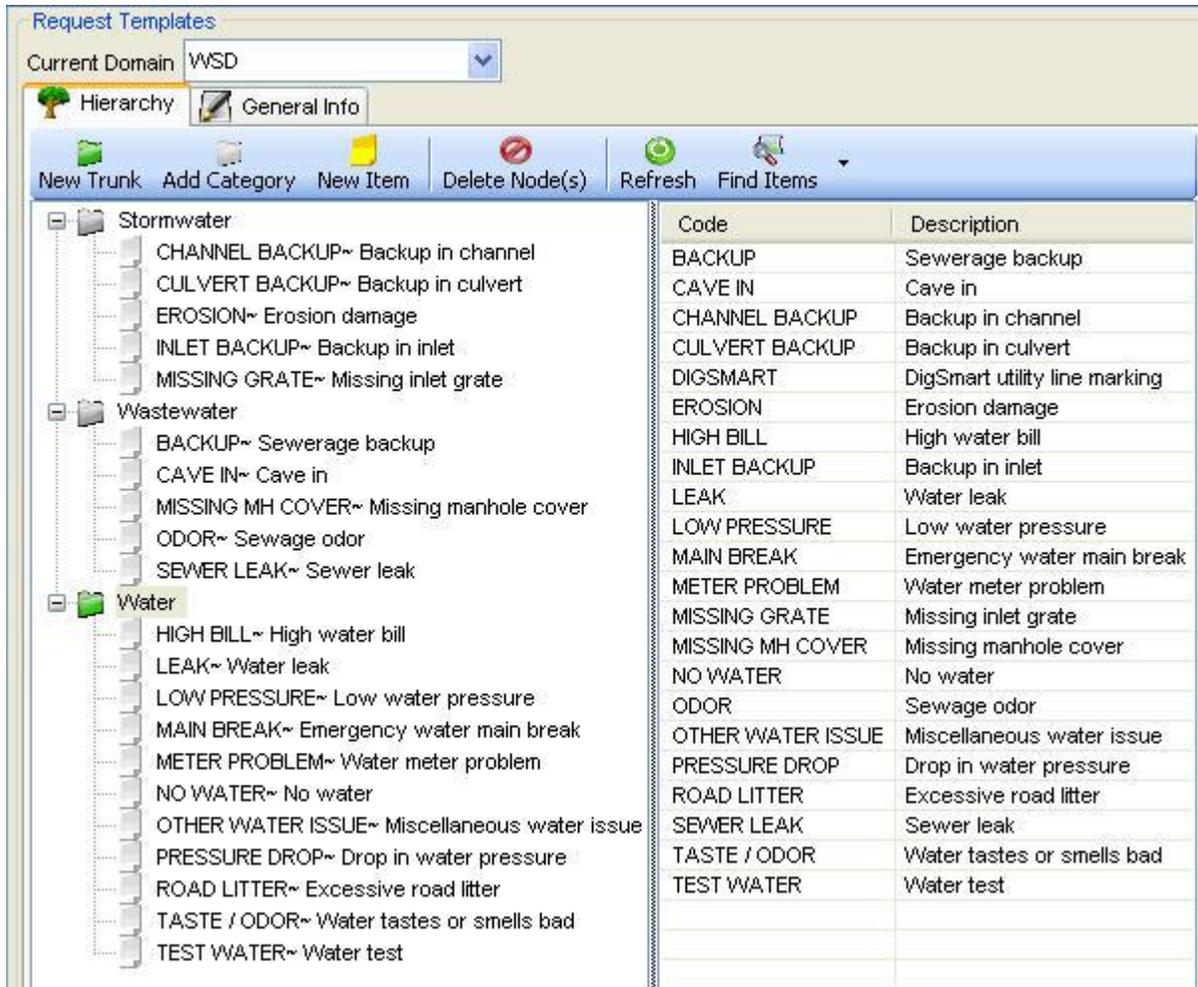
If the organization uses districts, zones, boundaries, commissioner areas, or any other geographic relationship for requests, define these under **Others > Map Layers and Fields** before beginning these steps.

**NOTE:** See the related section on [Map Layers and Fields](#).

## Request Hierarchy Tab

This information is organized into a **Hierarchy** on the left and a template list on the right on the **Hierarchy** tab. The Cityworks Data Template > **ProblemLeaf** may be used to load the information into the list or each item may be added by clicking **New Item** to open the **Request Template Edit** window. A **Request Template Edit** window with multiple tabs may be opened for the request template by double-clicking on it in the tree or in the list.

**NOTE:** The **General Info** tab allows information from multiple request templates to be viewed and updated at the same time. This tab is discussed at the end of the [Request Templates](#) section.



1. Create the hierarchy trunks and categories.

**NOTE:** See [Setting up Data Trees](#) for details.

2. Add each new request template using the **New Item** button.

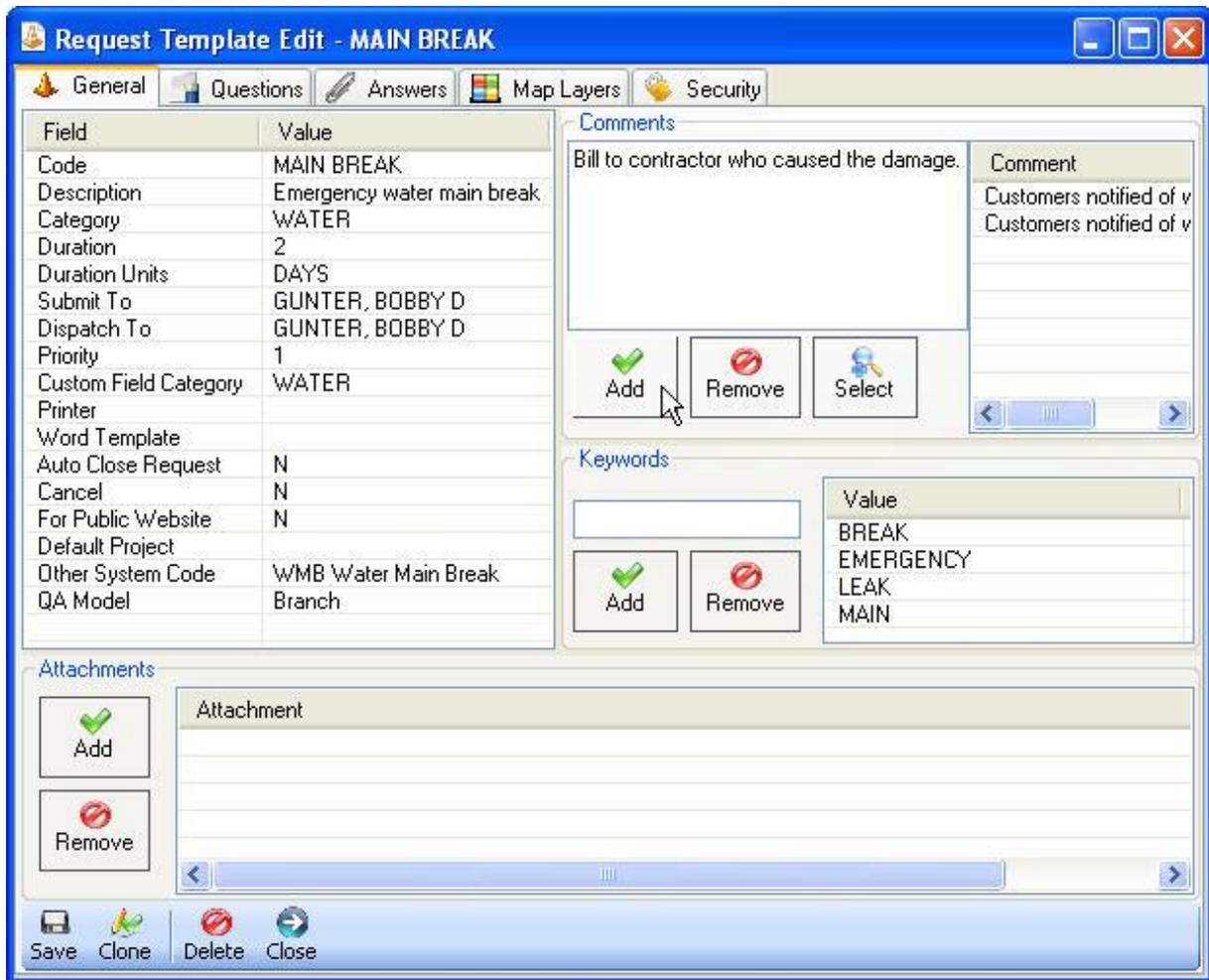
**NOTE:** Multiple request templates may be added using the Cityworks Data Template > **Problems Leaf**.

3. Add the detailed information on the **Request Template Edit** window as outlined in the following sections.

**NOTE:** Once a request template is completed, it may be cloned as described under [Cloning a Request Template](#).

## Request General Tab

A request code may be added or information updated on the **General** tab of the **Request Template Edit** window.



1. Set the default **Value** for each **Field** on the **General** tab. The window opens with these default values.

Field	Value
Code	
Description	
Category	
Duration	2
Duration Units	DAYS
Submit To	
Dispatch To	
Priority	3
Custom Field Category	
Printer	
Word Template	
Auto Close Request	N
Cancel	N
For Public Website	N
Default Project	
Other System Code	
QA Model	Branch

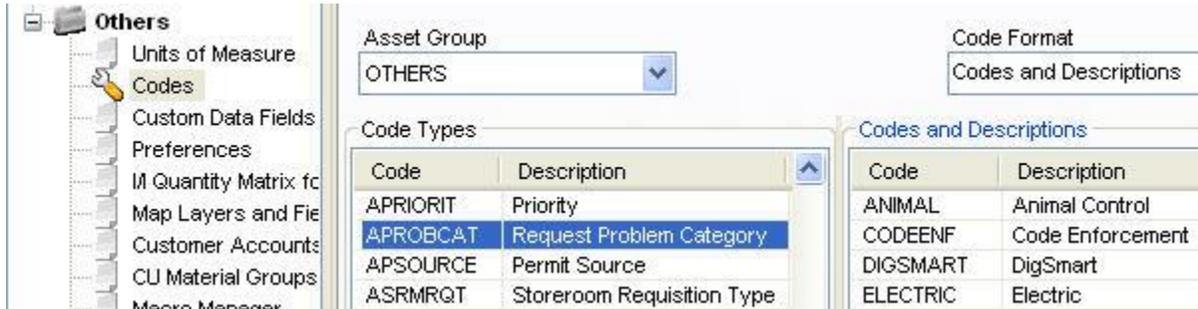
- **Code**—Type in the request code, up to 20 characters.

- **Description**—Type in the description of up to 50 characters.

**NOTE:** The **Description** lists in the request tree after the tilde following the **Code**.

- **Category**—Select from the dropdown or click **Define New Code** and click out of the field to open the **APROBCAT Codes** box for defining a new code.

Request categories may also be set in **Others > Codes** under **APROBCAT**.



- **Duration**—Enter a whole number for the days or hours in which the service request should be completed. This number is used to populate the **Projected Finish Date** on the service request.

**NOTE:** A search can return all requests considered past due based on the expected **Duration Time** and **Units**.

- **Duration Units**—Double-click (or use the space bar) to toggle between **DAYS** and **HOURS**.
- **Submit To**—Select the default employee who receives this type of request. Leave blank if this request may be assigned to more than one employee.

**NOTE:** An email may be set up to automatically email the **Submit To** and/or **Dispatch To** employee when the request is saved.

- **Dispatch To**—Select the default investigator who investigates this type of request.
- **Priority**—Select the urgency of this request using the dropdown selection or click **Define New Code** and click out of the field to open the **APRIORIT Codes** box for defining a new code.

**NOTE:** The same set of **Priority** codes is used for work orders. Beginning with 4.5 sp 3, at least one priority code is required and up to 9 are allowed.

Priority may also be set in **Others > Codes** under **APRIORIT**.

- **Custom Field Category**—Select from the dropdown which is populated in **Custom Field Templates**. See the section on [Custom Field Templates](#) for details on defining a category and adding fields.
- **Printer**—Assigns a default printer to print this type of request.
- **Word Template**—Use the dropdown to select the name of the default custom print template or leave blank to use the Cityworks default SR.dot template. If the desired code is not in the list, click on **Define New Code** to open a **Codes** box for adding new codes. Type in the **Code** of 8 characters or less and the **Description**. For details on [Customizing Print Templates](#), see [Cityworks Customization](#).





**NOTE:** The **Clear** button can be used to remove a selected project from the request template.

- **Other System Code**—Use the **Other System Codes** window under **Others** to populate this field. Once populated, the field mappings to another system, like 311, are listed in the field by **Code, Description 1, and Description 2.**
- **QA Model**—Toggles between **Branch** and **Linear.**

**NOTE:** **Linear** is for Server users.

2. Click the **Save** button to add the request template to the hierarchy and the database and assign the **SID.**

**NOTE:** The **SID** is a system-generated, unique identifier in the Cityworks database.

The request template must be saved before **Comments, Keywords, or Attachments** are added since it must have a **ProblemSID** to link to these other fields. This message box opens to alert the user.

3. If desired, enter any frequently-used Comments for the request type on the right pane and click the **Add** button in the **Comments** pane to list it on the right. **Comments** may be up to 250 characters long. They are listed on the service request and loaded by double-clicking on the desired comment.

**TIP:** Predefined **Comments** are especially valuable for handheld wireless systems to facilitate data entry or to standardize responses for search queries.

4. Type in a keyword and click the **Add** button in the **Keywords** pane to add it to the list. Do this for each keyword. No spaces are allowed in keywords; may use underscore (or low line \_ ) to connect words.

**NOTE:** Clicking the **Add** button saves the data to the request template.

5. To add any related file(s), click on the **Add** button in the **Attachments** section to open the **Select attachment file(s)** box, browse to the network location, select the file, and click **OK** to load the path on the right. Do this for each file.

Once all the information has been entered on all the tabs for a request template, the **Clone** button can be used to enter the same settings for another request template. See [Cloning a Request Template](#) for more information.

**IMPORTANT:** Once request templates have been used, they should not be deleted. To prevent a template from being used, set the **Cancel** setting to **Y** so it is no longer available as a selection for new requests but can be displayed with historical information.

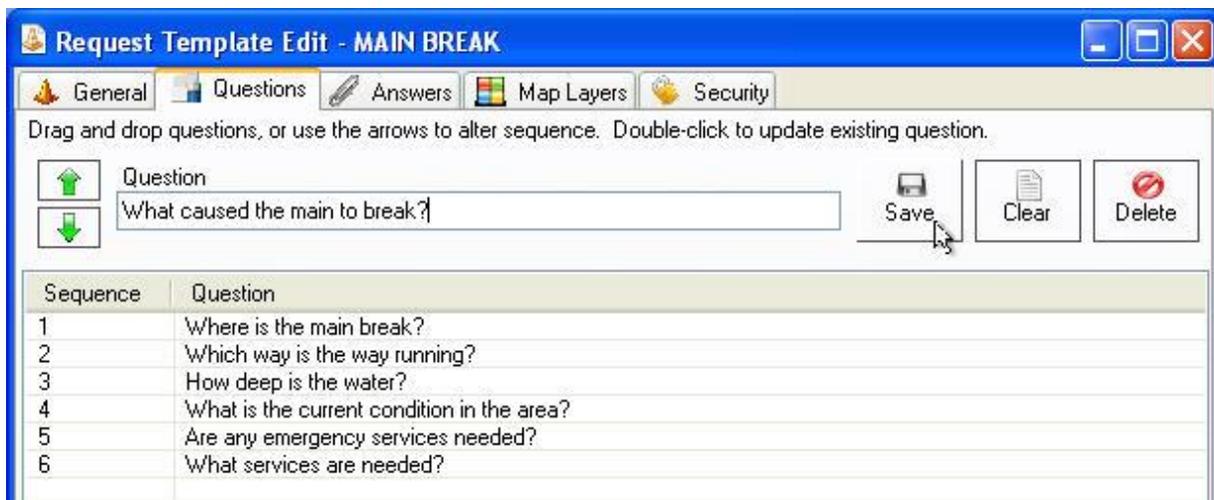
If a template hasn't been used, it may be deleted by clicking the **Delete** button. When the confirmation message opens stating the process will delete the named template and everything under it and asking if the user wants to continue, click **Yes** to delete the template.

## Questions Tab

Questions are set up to facilitate the call takers in gathering all the information needed by the inspector and to provide standard responses to callers for each type of request. Input from the inspectors and call takers is invaluable in setting up scenarios to provide written records of the details. With questions and answers set up in this manner, calls may be taken by a central dispatching system, providing the necessary information to both caller and inspector.

**TIP:** A question loop may be created, especially for frequently-asked questions, so that the call taker can return to the beginning of the sequence and begin again.

1. Switch to the **Questions** tab.



2. Enter the question and click **Save**.
3. Add all the questions.
4. If necessary, use the up/down arrow buttons (or drag and drop a question) to move questions into the desired order.

The **Clear** button clears the **Question** field and the **Delete** button deletes the selected question.

**NOTE:** Only one question may be deleted at a time.

## Answers Tab

Answers can be set up for each question using several formats. The question that follows can vary depending on the answer to make obtaining the correct information as quick and easy as possible.

1. Switch to the **Answers** tab.

Question	Answer	Next Question	Priority	SubmitTo
4 What is the current condition in the area?	Flooding	5 Are any emergency services needed?		GUNTER, BOB
4 What is the current condition in the area?	People in danger	5 Are any emergency services needed?	1	GUNTER, BOB
4 What is the current condition in the area?	Buildings/property in danger	5 Are any emergency services needed?		GUNTER, BOB
4 What is the current condition in the area?	Water spraying into the air	5 Are any emergency services needed?		GUNTER, BOB

2. For the question listed in the **Question** field, select the **Answer Format** radio option.

- **This Text**—Type in a possible answer.
- **Yes**
- **No**
- **Unknown**
- **Date**
- **Any Free-form Response**—Allows the call taker to enter exactly what is reported.

If **Date** or **Any Free-form Response** is selected, no other **Answer Format** may be selected. An **Error** message opens when trying to add any other responses by alerting the user of the format specified. If a different format is wanted, highlight the item in the **Answers** list and click **Delete** before adding the new response.

3. Select the **Next Question** for the given answer.

**TIP:** Skip questions in sequences where they do not apply.

4. If desired, select any of the following fields for the given answer.

- **Submit To**—Select a **Submit To** employee for the request template if all requests of this type go to a particular employee or department.

**TIP:** A department may be used as the **Submit To** field so someone in the department can assign the **Dispatch To** according to who is available or already in the area.

- **Submit To Layer**—Enter the GIS layer name for the polygon feature class for area-based submitting when a location determines the **Submit To** employee.

**NOTE:** To have a service request submitted or dispatched to a certain employee based on its location, select a **Submit To Layer** with a **Submit To Field** and/or **Dispatch To Field**. The software uses the map layer to assign the **Submit To** and/or **Dispatch To** field according to the location of the incident address on the request. Map layers are defined under **Others > Map Layers and Fields**.

- **Submit To Field**—Enter the field name containing the **Submit To** employee from the polygon feature class table.
  - **Dispatch To**—Select a **Dispatch To** employee if this type of request is always dispatched to the same employee or department.
  - **Dispatch To Field**—Enter the field name containing the **Submit To** employee from the polygon feature class table.
  - **Priority**—Select a different priority if the answer changes the default priority set for this request.
5. If desired, enter any **Instructions** for the given answer for the call taker to follow or pass along to the caller.
  6. If desired, add an **Attachment** by clicking in the field to open the **Select attachment file(s)** box and browse to the desired file. To add a web page, go to the site, copy the URL (Uniform Resource Locator or global address of web documents), and paste into the **Attachment** box.

**TIP:** Entering a URL path allows call takers to access web pages providing a dynamic link to the most current information without having to update the **Attachment** on the request template.

7. Click the **Save** button to add the information to the database and list.
8. Follow steps 2-7 for each **Question** in the dropdown list. Check the **Show all questions** box to list all the questions in the **Next Question** dropdown for looping questions back to the beginning.

The screenshot shows a software interface with several tabs: General, Questions, Answers, Map Layers, Security, and vWO Templates. The 'Questions' tab is active, displaying a list of questions. The first question is '6 Do you have any other questions or concerns?' with a dropdown arrow. Below it is 'Next Question' with a 'Show all questions' checkbox checked. The second question is '1 What is the nature of your question?' with a dropdown arrow. To the right, the 'Answer Format' panel is visible, showing radio button options: 'This Text', 'Yes', 'No', 'Unknown', 'Date', and 'Any Free-form Response'. The 'Yes' option is selected.

**TIP:** When creating a question loop, be sure there is an end, such as having a question that can be answered **Yes** or **No** where one option loops back and the other ends the series.

Scroll over to view the additional columns of information in the list. These columns correspond to the information found on the tab.

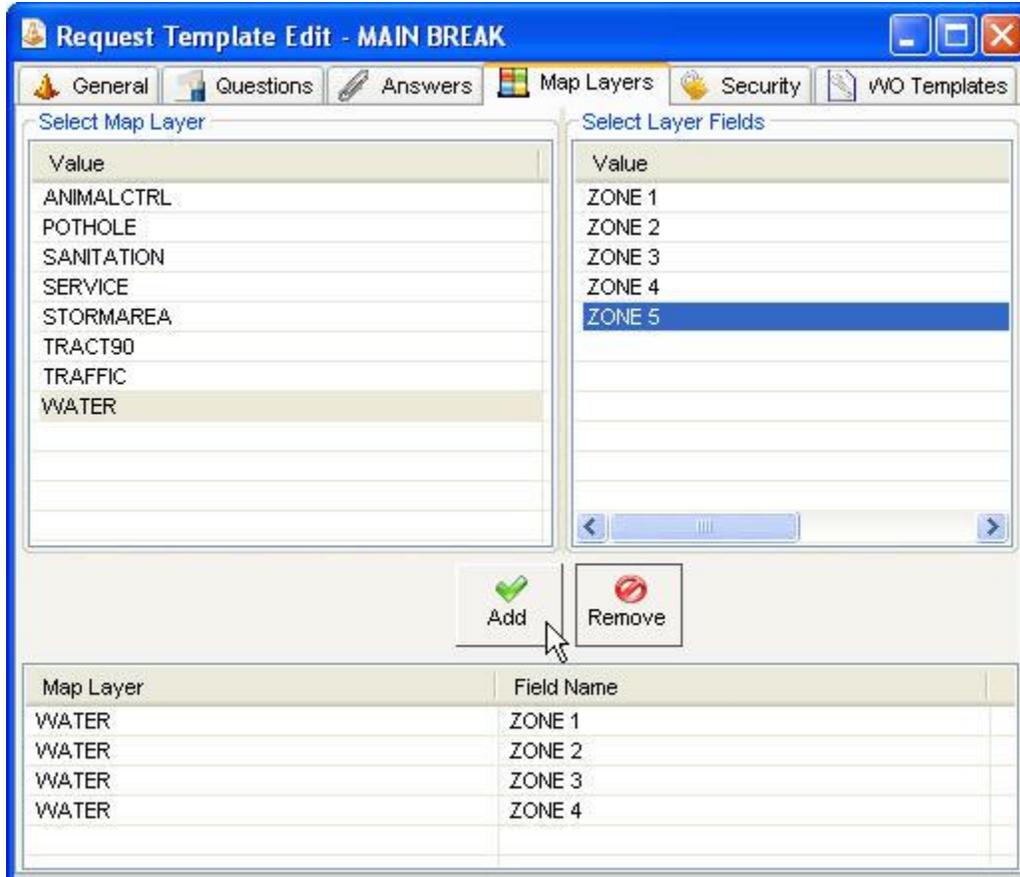
If desired, an answer may be edited by double-clicking on it in the list to reload the fields. Make the desired changes and click the **Save** button. When the message opens stating that the answer already exists and asking if the user wants to update it, click **Yes** to save the changes.

## Map Layers Tab

The **Map Layers** tab defines which additional GIS fields are displayed on the service request. Different map layers may be set up to correspond with various districts, zones, boundaries, commissioner areas, etc. There is no limit to the number of map layers that can be set up.

**NOTE:** Map layers are defined under **Others > Map Layers and Fields**. They must also be defined in the map document as a polygon feature class.

1. Switch to the **Map Layers** tab.



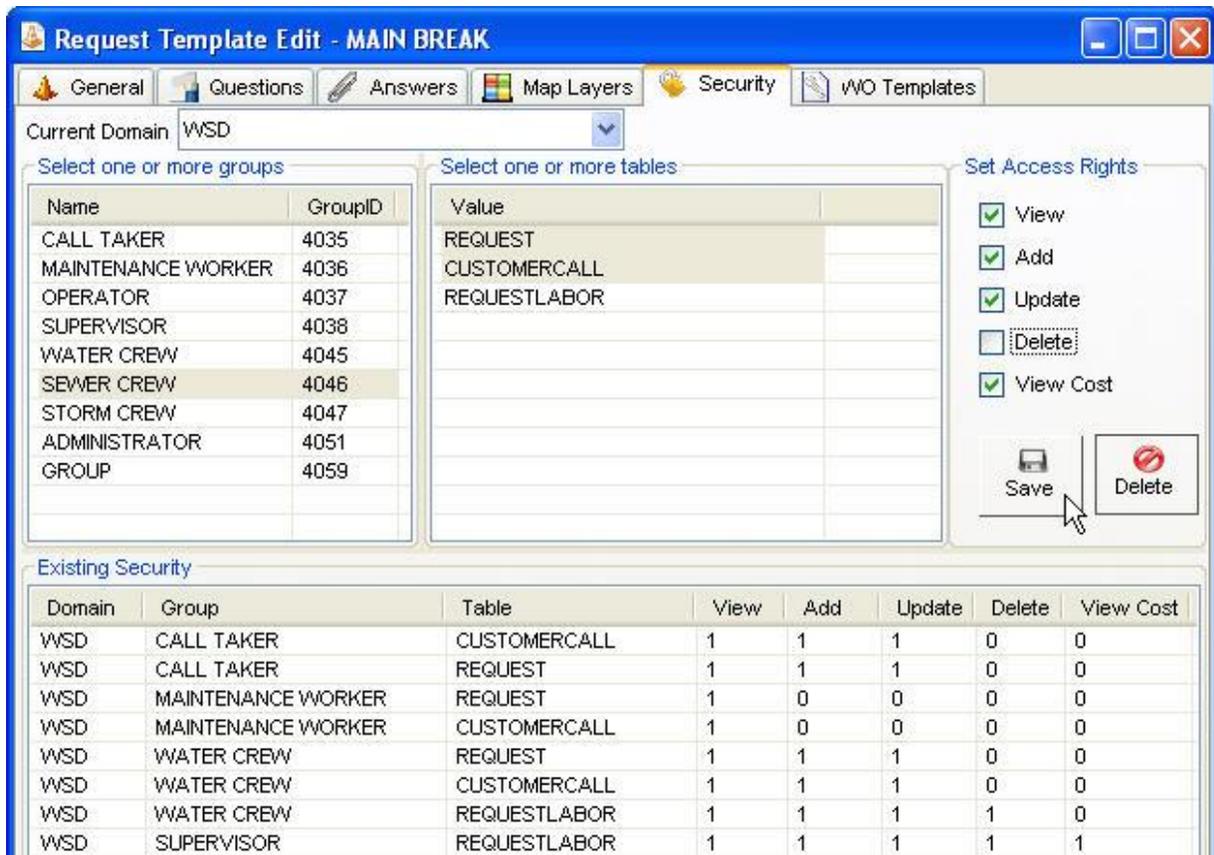
2. Select the map layer on the left pane to populate the corresponding **Value** in the **Select Layer Fields** on the right.
3. Select the desired value and click the **Add** button to add the **Map Layer** and **Field Name** to the list below.

## Security Tab

The **Security** tab is used to set the group access rights for the request template, giving permission for the group's users to view, add, update, delete, and/or view cost. In 2012.1, the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool.

**NOTE:** Security permissions can also be set for multiple request templates at the same time on the **Cityworks Setup > Template Security**.

1. Switch to the **Security** tab.



2. Select the group(s) on the left.
3. Select the applicable table(s) from the center.
4. Check the box(es) under **Set Access Rights** for the permissions allowed for each of the tables.

- **View**—Permission to view this type of request, the associated customer calls, or the request labor costs.
- **Add**—Permission to create a request, add a customer call, or input request labor.
- **Update**—Permission to update a request after it has been saved and populate general request information, customer call information, or labor costs.
- **Delete**—Permission to delete a request once it has been created, delete calls from the request, or delete labor costs.

**TIP:** Azteca Systems Inc. recommends cancelling service requests rather than deleting them from the **Request** table to allow users to view the information and reactivate the request if necessary. Limit the users with **Delete** permission for **Request**. Deleting a request removes that ID from the database so it cannot be reused or accounted for.

**IMPORTANT:** **Delete** permission for the **RequestLabor** table is needed for any users inputting labor costs so they can remove information which has been incorrectly entered.



## Cloning a Request Template

Once all the information for a request template is set on all the tabs, a template may be cloned to another request type to facilitate the set up. Frequently, much of the information remains the same for requests in the same **Category**, especially on the **Map Layers** and **Security** tabs. Cloning allows all the information loaded on the tabs to be moved to another template and then modified as needed.

1. Switch back to the **General** tab.
2. Double-click in the **Code** field (or select **Code** and press the **Enter** key) and type in the new **Code**.
3. Press the **Enter** key or exit out of the **Code** field which activates the **Clone** button and inactivates the **Save** button.



When a request template is opened, all buttons may be activated. If the administrator attempts to clone a template without first entering a new **Code**, a message box opens to remind the user to modify the code and try again.

4. Click the **Clone** button.
5. Modify the **Description** field to match the new **Code**.

Once information is entered in a field other than the **Code** field, the **Save** button is active and the **Clone** button is inactive.

6. Change any other settings for the template on the **General** tab, including removing any **Comments**, **Keywords**, or **Attachments** that are not applicable.
7. Click the **Save** button.
8. Verify that the information on the other tabs is correct or modify it as necessary.

## General Info Tab

To facilitate data entry when multiple templates share the same field values, information can be entered on the **General Info** tab of the **Request Templates**. The left pane lists all the fields and values found on the **General** tab of the **Request Template Edit** window, except for **Code** and **Description**, with any default values for the domain.

All the **Existing Templates** are listed on the right pane with the current values for all the fields displayed by columns in the same order as on the list. Arrow up or down on the **Existing Templates** list to load the corresponding values on the **General Info** pane on the left. This allows the administrator to view the current information without having to open each template and make mass updates by selecting the templates and entering a **Value** in the table on the left. Any values entered here override what is currently displayed.

***TIP:** Mass updating for request templates is particularly useful when an employee needs to be added or removed from the **Submit To** and/or **Dispatch To** lists or a new printer is installed.*

1. Close out of the **Request Template Edit** window and switch to the **General Info** tab of the **Request Templates**.

**NOTE:** The **Value** in the **General Info** box lists the default value assigned by the Cityworks domain administrator.

The screenshot shows the 'Request Templates' window. At the top, 'Current Domain' is set to 'WSD'. Below this are two tabs: 'Hierarchy' and 'General Info'. The 'General Info' tab is active and contains a table with the following data:

Field	Value
Category	
Duration	2
Duration Units	DAYS
Submit To	
Dispatch To	
Priority	3
Custom Field Category	
Printer	
Word Template	
Auto Close Request	N
Cancel	N
For Public Website	N
Default Project	

To the right of the 'General Info' tab is the 'Existing Templates' list, which is a table with the following data:

Code	Description	Category	Duration	Dur
BACKUP	Sewerage backup	SEWER	4.00	H
CAVE IN	Cave in	SEWER	6.00	H
CHANNEL BACKUP	Backup in channel	STORM	4.00	H
CULVERT BACKUP	Backup in culvert	STORM	4.00	H
DIGSMART	DigSmart utility line marking		2.00	H
EROSION	Erosion damage	STORM	2.00	D
HIGH BILL	High water bill	WATER	2.00	H
INLET BACKUP	Backup in inlet	STORM	4.00	H
LEAK	Water leak	WATER	4.00	H
LOW PRESSURE	Low water pressure	WATER	4.00	H
MAIN BREAK	Emergency water main b...	WATER	2.00	D
METER PROBLEM	Water meter problem	WATER	3.00	H
MISSING GRATE	Missing inlet grate	STORM	1.00	H
MISSING MH COV...	Missing manhole cover	SEWER	1.00	H
NO WATER	No water	WATER	4.00	H
ODOR	Sewage odor	SEWER	2.00	H
OTHER WATER I...	Miscellaneous water issue	WATER	2.00	H
PRESSURE DROP	Drop in water pressure	WATER	2.00	H
ROAD LITTER	Excessive road litter		1.00	H
SEWER LEAK	Sewer leak	SEWER	1.00	D
TASTE / ODOR	Water tastes or smells bad	WATER	4.00	H
TEST WATER	Water test	WATER	2.00	H

At the bottom of the window are buttons for 'Save', 'Clear', 'Refresh', and 'Delete'.

2. Select the **Current Domain** from the dropdown selection.
3. Select the templates for updating from the **Existing Templates** list, using <Shift + click> or <Ctrl + click> for multiple selections.
4. Double-click in the **Value** field(s) to update and enter the new value(s).
5. Click the **Save** button to make the changes.

Use the **Clear** button to clear the field **Value** column. The **Refresh** button refreshes the values in the columns on the right pane. Request templates may also be deleted by selecting the templates and clicking the **Delete** button.

**IMPORTANT:** Deleting request templates is not recommended if they have been used; setting **Cancel** to **Y** is preferred to maintain the request history. If the template is deleted, the rest of the information is orphaned in the Cityworks database.

Scroll across to view the additional columns, which list the same fields as on the left pane in the same order.

**TIP:** Columns may be collapsed to view the columns further to the right with the **Code** and **Description**.

## Work Order Templates

Work order templates contain default information for each type of work order, including priority, labor, materials, and equipment estimates, etc. Because configuration is unique to each organization, Cityworks does not include any predefined work order templates. A cloning function, similar to the one found on request templates, facilitates the set up by copying over the information on all tabs, except for the **Budget Plan** tab. View and edit permissions are assigned by domain group to each work order template. Selecting the asset type displays the associated work order templates.

When a work order is created, the associated tasks can load automatically, along with estimated labor costs, employees, materials, and equipment. Data entry is simplified for the user by adding the necessary information to the work order template.

Before adding work order templates, the following information should be added to Designer (click on any one to view more information):

**Cityworks Setup** functions:

- [Employees](#)
- [Contractors](#)
- [Equipment](#)
- [Materials](#)
- [Tasks](#)

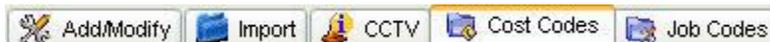
**Asset Setup** functions:

- [Asset Group Definitions](#) ([Define Groups](#) and [Assign Assets](#) tabs)

The default setting for labor cost is the rates listed for the employees under the **Employees** function. To use dynamic labor costs, which are based on the **Cost Codes** and/or **Job Codes** that you enter, set up these additional functions.

**Others** functions:

- **Codes**—Use the **Cost Codes** tab and/or **Job Codes** tab.



- **Preferences**—Select **Y** for **Use Dynamic Cost Codes**. (**N** is the default and uses static costs.)

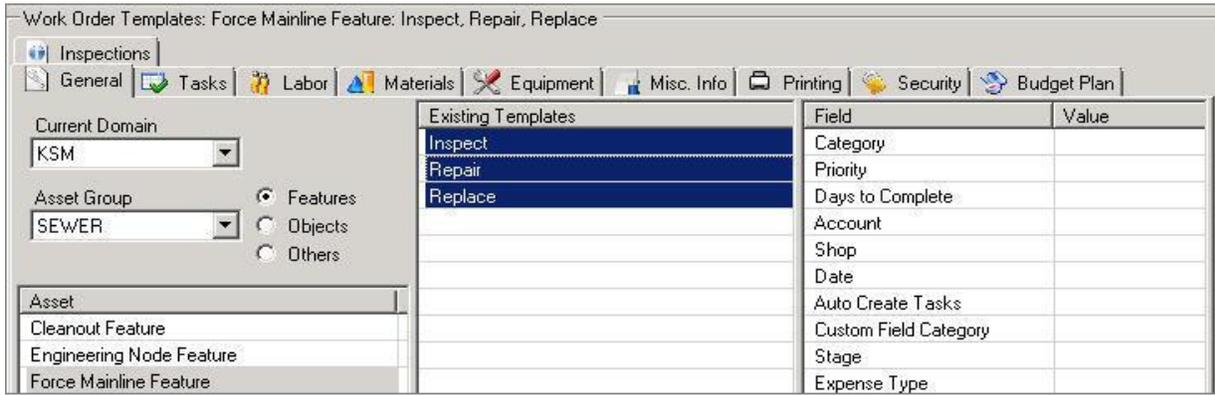
First Day of Week	Sunday
Use Dynamic Cost Codes	Y
First Month of Fiscal Year	July

## Work Order General Tab

The **General** tab lists basic information about the work order activity, including the asset type the work is done on, description, priority, repeat cycle, and work months.

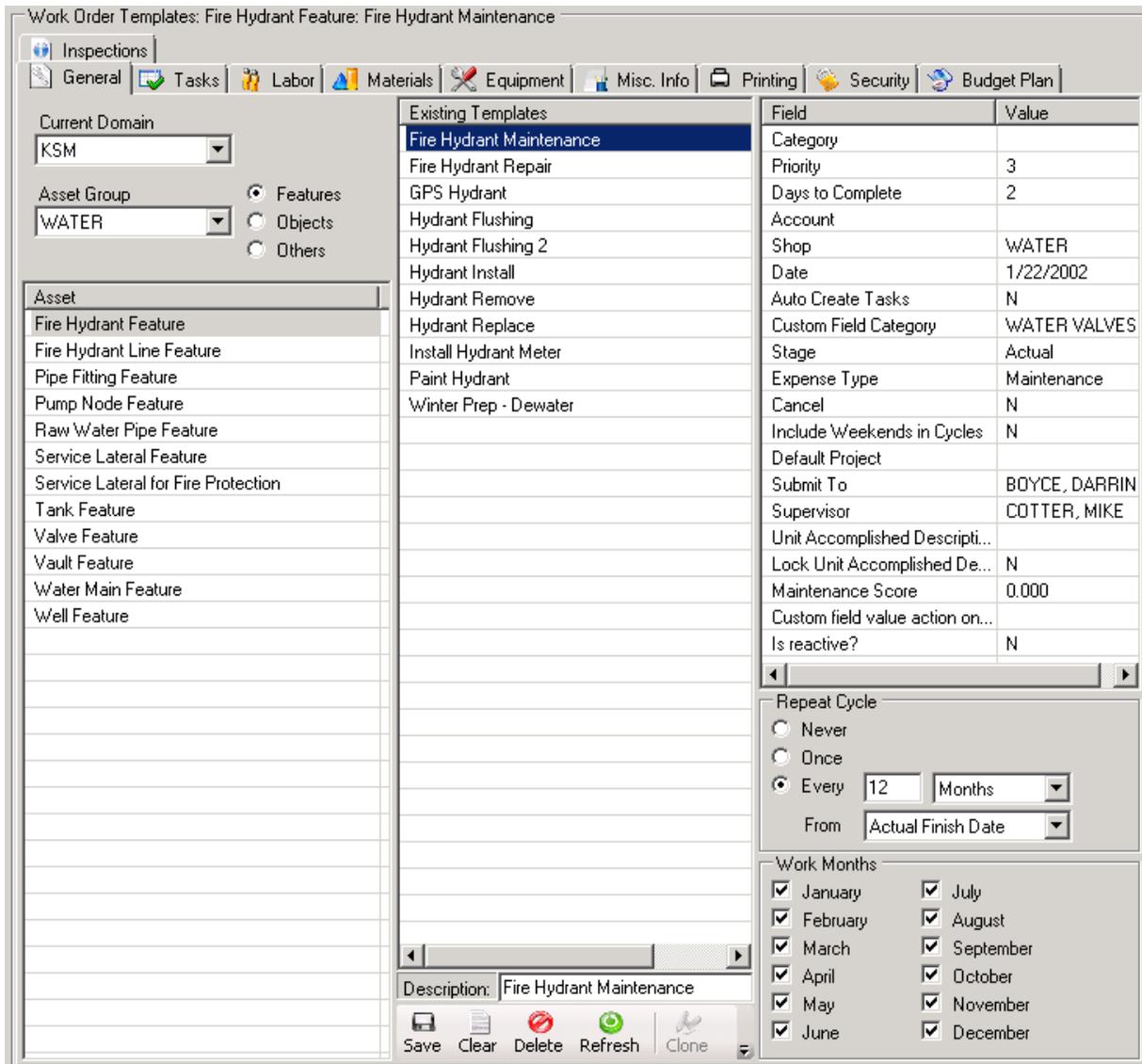
Multiple work order templates may be selected on the **General** tab before adding information to the **General**, **Misc. Info**, **Printing**, and **Security** tabs if the same information applies to all the templates. No **Value** is listed for any **Field** on the right pane of the **General** tab since these values may vary for the

selected templates. Any information added here and saved overrides the default or current **Value** listed for the selected **Field** on each of the work order templates listed.



V2011.B2.21

However, the **Tasks**, **Labor**, **Materials**, **Equipment**, and **Budget Plan** tabs may not be used when multiple work order templates are selected. A message box opens to inform the administrator that the information on the selected tab cannot be altered for multiple templates.



1. Click on **Work Order Templates** under **Cityworks Setup**.
2. Select the **Current Domain** and **Asset Group** from the dropdown selections.
3. Select the radio button option for the type of asset to create the work order template for and to populate the **Asset** list on the left.
  - **Features**—Use for a list of feature classes in the selected asset group.
  - **Objects**—Use for a list of related objects at any n-level for the selected asset group.
  - **Others**—Use for a list of non-asset based, user-defined work order groups, such as miscellaneous work like equipment or office maintenance.

**TIP:** To use asset readings to generate work orders, use **Features** or **Objects**, e.g., set up vehicles as related objects.

4. Type in the work order **Description** at the bottom of the middle pane, up to 100 characters long, and click the **Save** button to activate the rest of the form.

When the work order template **Description** is saved, the header of the window adds the asset type and **Description** so the user knows which template is open when working on the tabs.

5. Populate the **Value** for each **Field** listed at the top of the right pane. This pane is populated with these default values.

- **Category**—Select the maintenance department from the dropdown or click **Define New Code** and click out of the field to open the **Codes** box for defining a new **AWOCAT** code.

**NOTE:** Work order categories may also be set in **Others > Codes > Add/Modify tab > Asset Group: Others** under **AWOCAT**.

- **Priority**—Select the urgency or importance of this work activity using the dropdown selection or click **Define New Code** and click out of the field to open the **Codes** box for defining a new **APRIORIT** code.

**NOTE:** **Priority** may also be set in **Others > Codes** under **APRIORIT**. This same set of codes is used for requests. Beginning with Cityworks 4.5 sp 3, at least one priority code is required and up to 9 are allowed.

- **Days to Complete**—Type in the number of days routinely needed to complete the work. The number entered in **Days to Complete** is used to calculate and populate the **Projected Finish** date on the work order. New work order templates have a default value of 2.00 (unless they were cloned from an existing template). On a work order, the **Projected Start** date must be completed, but the **Projected Finish** can be left blank.

**NOTE:** If the **Days to Complete** field is left blank, the **Projected Finish** date will display **MM/DD/YYYY** on the work order.

**TIP:** To search for **Past Due** work orders, fill in the **Days to Complete** field.

- **Account**—Type in any user-defined tracking number to automatically populate the **Account** field on each new work order of this type, up to 20 characters.
- **Shop**—Select the maintenance shop or department from the dropdown list or select **Define New Code** and exit out of the field to open the **Codes** box for **Shop**.

**NOTE:** The shop list can also be populated in **Others > Codes > Shop**. **Shop** is usually associated with a polygon map theme divided into service areas but may be defined as a code without the map.

- **Date**—Defaults to today's date but may be changed if desired. This **Date** field is for showing the date the template was created.
- **Auto Create Tasks**—Select **Y** to automatically list the tasks on the **Tasks** tab for new work orders of this type. Each predefined task with a sequence of **1** is listed with a **Current** status on the new work order. Each additional task has a status of **Pending**. No projected or actual dates are populated.

Search By **HIERARCHY**

SeqID	Task	Description	Assigned To	Shop	Comments

Sequence  Response

Assigned To  Status

Shop  PermitNo

Comments

Pri Start Finish

Actual Start

Actual Finish

Rework  Continue

[Add/Update](#) [Remove](#)

Sequence	Task	Status	Proceed	Rework	Assigned To
1	LOCATE	CURRENT	N	N	
2	EXCAVATE	PENDING	N	N	
3	INSTALL_PIPE	PENDING	N	N	GUNTER, BC
4	FLUSHING	PENDING	N	N	GUNTER, BC
5	INSPECTWPIPE	PENDING	N	N	GUNTER, BC
6	BACKFILL	PENDING	N	N	
7	PAVE	PENDING	N	N	
7	LANDSCAPE	PENDING	N	N	

Select **N** to list the tasks on the **Tasks** tab into the **Predefined** list on the new work order for the users to use as task selections.

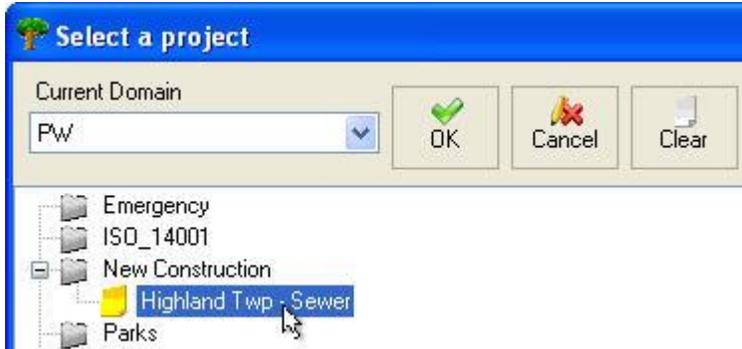
Search By **PREDEFINED**

SeqID	Task	Description	Assigned To
1	BARRICADE	Place barricades, signs and cones	
2	TVINSPECT	TV Inspection of Line	

- **Custom Field Category**—Select from the dropdown which is populated in **Custom Field Templates**. See the section on [Custom Field Templates](#) for details on defining a category and adding fields.
- **Stage**—Toggles between **Actual** and **Proposed**. New work orders will be set to this predefined stage automatically.
- **Expense Type**—Toggles between **Maintenance** or **Capital Improvement**.
- **Cancel**—Select **Y** to inactivate the work template and maintain the work history but prevent the template from being used any more. All new templates default to **N**.
- **Include Weekends in Cycles**—For cyclical work orders, a **Y** response includes weekends when calculating start dates and can schedule a work order to begin on a weekend. This functionality is especially useful for treatment plants, pump stations, or other locations where employees work

every day of the week. An **N** response doesn't include weekends in calculating start dates and schedules a cyclical work order for the next workday following the weekend.

- **Default Project**—Opens the **Select a Project** popup to automatically associate all work orders of this type to the selected project.



**NOTE:** A project can be cleared from the field by clicking the **Clear** button.

- **Submit To**—Select from the dropdown to automatically load the **Submit To** field for these types of work orders.
- **Supervisor**—Select from the dropdown to automatically load the **Supervisor** field for these types of work orders.
- **Unit Accomplished Description**—Select from the dropdown box with a customized set of possible unit codes. Set these codes under **Others > Codes > Asset Group of Others > UACDESC**. The **Description** for the selected **Code** will be listed on each work order of that type in the space following the **Unit Accomplished** entry field.

**TIP:** Setting the value on the template facilitates data entry into the **Units Accomplished** field because the units are already listed on the work order. It also prevents some users from entering a distance in feet while others are entering it in miles. With the units consistent per work order type, the values can be added together to provide accurate information on the work that is being accomplished.

Units Accomplished  Linear Feet

Codes

Current Domain: Pw

Buttons: Add/Modify, Import, CCTV

Asset Group: OTHERS

Code Format: Codes and Descriptions

Code Types		Codes and Descriptions	
Code	Description	Code	Description
AYNNA	Yes, No, Not Applicable	CU YD	Cubic Yards
CONSTAT	Contract Status	FITTING	Fitting
CONFUND	Contract Fund Source	FT	Feet
CONTYPE	Contract Type	HYDRANTS	Hydrants
EMAILTMP	Email Word Templates	LIN FT	Linear Feet
GLACCOUNT	General Ledger or Financial Acc...	MANHOLES	Manholes
INSPPRINT	Inspection Print Templates	MILES	Road Miles
PMTSTAT	Work Permit Status	POTHOLES	Potholes filled
PMTTYPE	Work Permit Type	SQ FT	Square Feet
PRJSTAT	Project Status	STOP	Stop Signs
REQPRINT	Request Print Templates	VALVES	Valves
SHOP	Maintenance Shop or Department		
SRSTATUS	Service Request Status		
STORERM	Storeroom Name		
SUBCONTP	Subcontractor Type		
UACCDISC	Units Accomplished Description		

- **Lock Unit Accomplished Description**—Select **Y** to prevent the user from changing the desired value on the work order form so no selection box pops up when a user clicks on the unit description. Set to **N** to allow users to access the selection box and change the unit descriptions.

**NOTE:** The Cityworks domain administrator can change the units when creating a new work order with the lock set to yes but once the work order has been exited, the units can no longer be changed by any user.

- **Maintenance Score**—A user-defined field used to calculate or set a score on a work order template. The score is applied when the actual finish date is set on the work order. The maintenance score represents various work activities performed on an asset over time. Every time work is done on an asset, the maintenance score is accumulated to create a historical maintenance record. This information is visually represented as orange circles on the map using the **Condition** panel with a set time frame.
- **Custom field value action on child WO creation**—If the field is left blank or **Default** is selected, fields do not copy over. If **ParentWO** is selected, a child work order's custom value fields will load with the parent work order data.
- **Is reactive?**—Select **Y** to indicate that this work order template is reactive. The default, **N**, indicates that the work order template is not reactive.

**NOTE:** When Database Manager runs, it will update this field for any historical records based on whether or not the work order has a service request associated with it.

6. If desired, select a **Repeat Cycle** of **Every** or **Once** for cyclical work orders. Changing the radio button option from **Never** to **Once** or **Every** activates the other fields.

**TIP:** A **Repeat Cycle** can also be set up from an individual work order. The benefit to doing it as part of the template is that it is automatically set up on every work order of this type.

- **Never**—Default setting which does not automatically generate another work order.

- **Once**—Set for a work order activity requiring a crew to return one time, such as for an inspection.
- **Every**—Set the desired cycle length for regular, scheduled maintenance work by typing in a number and selecting the desired unit from the dropdown selection of **Days**, **Weeks**, **Months**, or **Years**. Then set the **From** date to be either from the **Actual Finish Date** or **Projected Start Date**.

The screenshot shows a configuration window with two sections. The top section, titled "Repeat Cycle", has three radio buttons: "Never", "Once", and "Every". The "Every" option is selected. Next to it is a text box containing the number "2" and a dropdown menu set to "Years". Below this is a "From" label and a dropdown menu set to "Projected Start Date". The bottom section, titled "Work Months", contains a grid of checkboxes for each month of the year. The months from March to November are checked, while January, February, and December are unchecked.

Repeat Cycle	
<input type="radio"/> Never	
<input type="radio"/> Once	
<input checked="" type="radio"/> Every	2 Years
From	Projected Start Date

Work Months	
<input type="checkbox"/> January	<input checked="" type="checkbox"/> July
<input type="checkbox"/> February	<input checked="" type="checkbox"/> August
<input checked="" type="checkbox"/> March	<input checked="" type="checkbox"/> September
<input checked="" type="checkbox"/> April	<input checked="" type="checkbox"/> October
<input checked="" type="checkbox"/> May	<input checked="" type="checkbox"/> November
<input checked="" type="checkbox"/> June	<input type="checkbox"/> December

7. Uncheck any **Work Months** during which the specified work activity is not performed, for example mowing the grass at a park location that receives snow during the winter months.
8. Click the **Save** button.

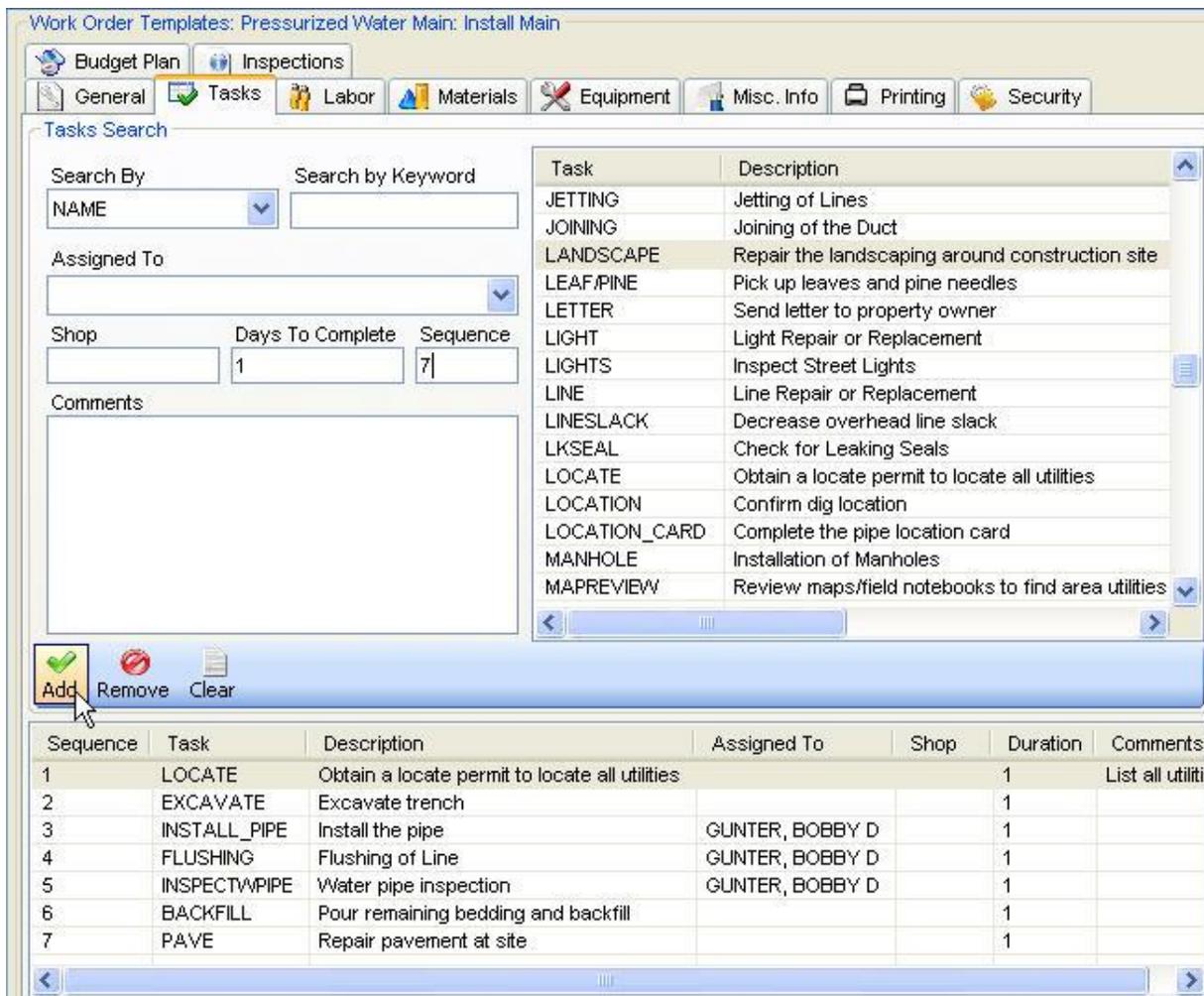
***IMPORTANT:*** If a work order template has been used, do not delete it. Cancel the template to maintain the work history. Deleting the work order template orphans the information creating problems in the Cityworks database.

If it hasn't been used, a work order template may be deleted by selecting the work order template and clicking the **Delete** button. Click **Yes** when the confirmation box opens. Deleting is included to allow modifications in template names and descriptions at the time of set up.

## Tasks Tab

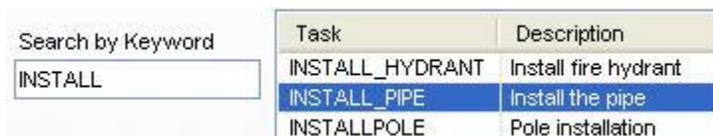
The **Tasks** tab attaches predefined tasks to the work order. A work order template must be selected on the **General** tab before switching to any of the other **Work Order Template** tabs or a message box opens to remind the user.

1. Switch to the **Tasks** tab.



2. Use one of the following ways to load the task selection.

- Type a keyword in the blank **Search by Keyword** field and press **Enter** to list the associated task(s).



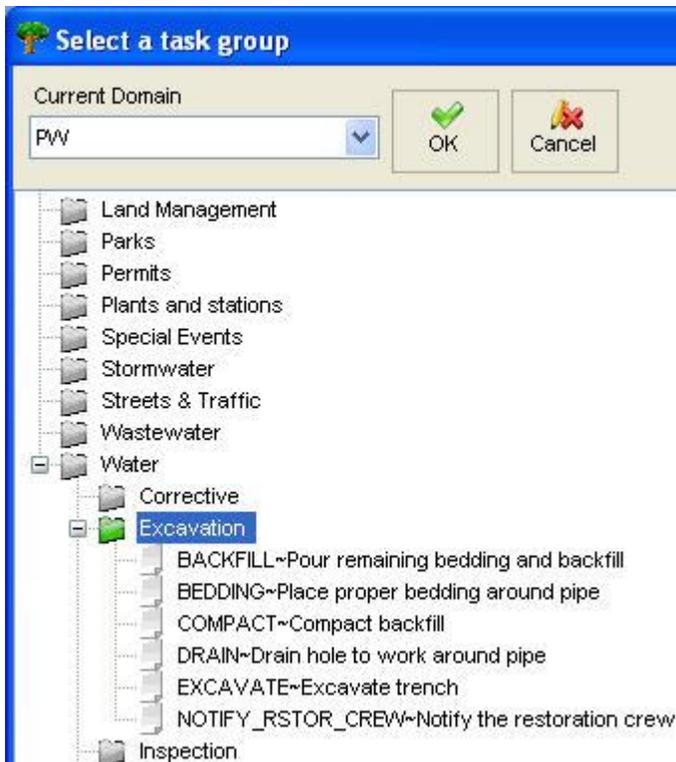
- Select either **Name** or **Hierarchy** from the dropdown selection. Selecting **Name** loads all the tasks in the box. Use the scroll bars to find the desired task.

Task	Description	Assign
ADJUST	Adj. operator linkages; limit switches on controls	
ADMIN PROCESS	Administration process work order information	PARKS,
AERIFICATION	Aerify Playing fields	MEYER:
AIR FILTER	Replace Air Filter	HENRY,
ASSETS	Add department assets/infrastructure to GIS	
BACKFILL	Pour remaining bedding and backfill	
BALLING	Balling of Line	
BARRICADE	Place barricades, signs and cones	
BEDDING	Place proper bedding around pipe	
BILLSTOP	Schedule site specific billing to end	
BUILDINSPECT	Inspect building	CELLIS,
CABLING	Installation of Cable	
CHECK CONTROLS	Controls respond to a rising water level	
CLEAN	Clean pump	
COLLECT	Collect unattached assets	GARCIA

Selecting **Hierarchy** opens the box for selecting a group of tasks. Open the folder(s) to locate the desired task(s) and double-click on the entire folder or a single task (or select and click **OK**) to list the task(s) in the box. Tasks may be selected from other domains since some tasks may require cross-departmental cooperation.

**NOTE:** The **Clear** button can be used to clear the task list on the top pane.

**TIP:** Open the folder to verify that materials are listed in it. If the folder contains other folders, the hierarchy closes when the folder is selected without loading any tasks.



3. Select the task from the list to add to the work order in the order the work is to be performed.

4. If desired, select an **Assigned To** employee from the dropdown list.
5. To add a **Shop**, tab to the **Shop** field (or move to the field and press the **Enter** key or double-click in the field) to open the **SHOP Codes** selection box. Double-click to load the **Shop** field (or select and click **Select**). If necessary, populate the box by typing in the **Code** and **Description** for each shop.
6. Enter the **Days to Complete** the task if different than **1**.
7. You can change the **Sequence** number if the task can be done at the same time as the previous task or to add a task that comes earlier in the sequence.

**NOTE:** The next number automatically loads in the **Sequence** field when the **Add** button is clicked.

8. If desired, enter any **Comments**. In a new work order, these **Comments** are listed with the tasks, not on the work order **Comments**.
9. Click the **Add** button to add the task to the list at the bottom and advance the **Sequence** number.
10. Add each task needed for this work order by following steps 2-6, changing the **Sequence** number if needed for tasks that can be done at the same time or to add a task that comes earlier in the sequence.

If an additional sequence ID is wanted when an item with that number already exists, a **Confirm Update** message opens stating that the numbered sequence already exists. Click **No** to have it list an additional task for the number indicated or click **Yes** to renumber the previously defined sequence ID(s).

If the task is already in the list, but needs to be updated, double-click on it to reload the **Task** and **Description**. Make the desired changes and click the **Add** button. Click **Yes** when the message box opens stating that this task already exists and asking if the user wants to update it.

To delete from the list, select the task(s) and click the **Delete** button. Click **Yes** when the confirmation box opens asking if the user wishes to remove the selected task(s) from the template.

## Labor Tab

The **Labor** tab attaches employee or contractor labor costs to the work order. Assigning labor to the template lists the labor costs on the work order as an **Estimated** cost which, if accurate, can be transferred to the **Actual** costs. Another way to add this labor is to view the **Actual** costs and then select **Predefined**. This loads the employees and/or contractors into the list so you can select the desired ones and enter their labor.

1. Switch to the **Labor** tab.

Work Order Templates: Pressurized Water Main: Flush Main

Security Budget Plan Inspections

General Tasks Labor Materials Equipment Misc. Info Printing

Labor Search

Employee    Search By    Group Name    Keyword  
 Contractor    GROUP NAME    WATER CREW   

**WATER CREW**

Name	Hourly Rate	Ov	Rate Types	Cost
GUNTER, BOBBY D	36	18%	<input checked="" type="checkbox"/> Regular	<input checked="" type="radio"/> Show Static
HILL, JIM	25	0%	<input type="checkbox"/> Overtime	<input type="radio"/> Show Dynamic
ROBERTS, GUY F	9.5	36%	<input type="checkbox"/> Holiday	<input type="radio"/> Show Both
			<input type="checkbox"/> Benefit	Hours: 2
			<input type="checkbox"/> Stand By	Description:
			<input type="checkbox"/> Shift Differential	
			<input type="checkbox"/> Overhead	
			<input type="checkbox"/> Other	

Add Clear Remove

Static Cost Codes

Name	Type	Group	Contractor #	Rate Type	Hours/Units	Cost
GUNTER, BOBBY D	Employee	WATER CREW		Hourly	2.00	72.00
HILL, JIM	Employee	WATER CREW		Hourly	2.00	50.00
ROBERTS, GUY F	Employee	WATER CREW		Hourly	2.00	19.00

Estimated Labor Costs: \$141.00

- For contractor labor, switch to the **Contractor** radio button option.
- Load the employee(s) or contractor(s) in the center right pane by one of the following methods.

**NOTE:** Multiple employees may be listed at the same time using **Group Name** or **Keyword** and multiple contractors by using **Contractor Hierarchy** or **Keyword**.

- For employees, select either **Group Name** or **Employee Name** from the **Search By** dropdown selection and use the **Group Name** dropdown to find the desired group or employee.

**TIP:** Since **Group Name** is the default selection, the groups are already loaded in the **Group Name** dropdown.

- Type a **Keyword** into the field and press the **Enter** key to list the employees or contractors, depending on the radio button option selected.
  - Select either **Contractor Name** or **Contractor Hierarchy** from the **Search By** dropdown. For **Contractor Name**, which is the default, use the **Group Name** dropdown to find the desired contractor. For **Contractor Hierarchy**, double-click on the desired folder or contractor from the popup box.
- Select the employee(s) or contractor(s) from the list to add to the work order.

**NOTE:** At least one of the employees or contractors must be selected before clicking the **Add** button or a message opens to remind the user to select a labor item.

**TIP:** If the hours are the same for multiple employees, their labor can be added at the same time.

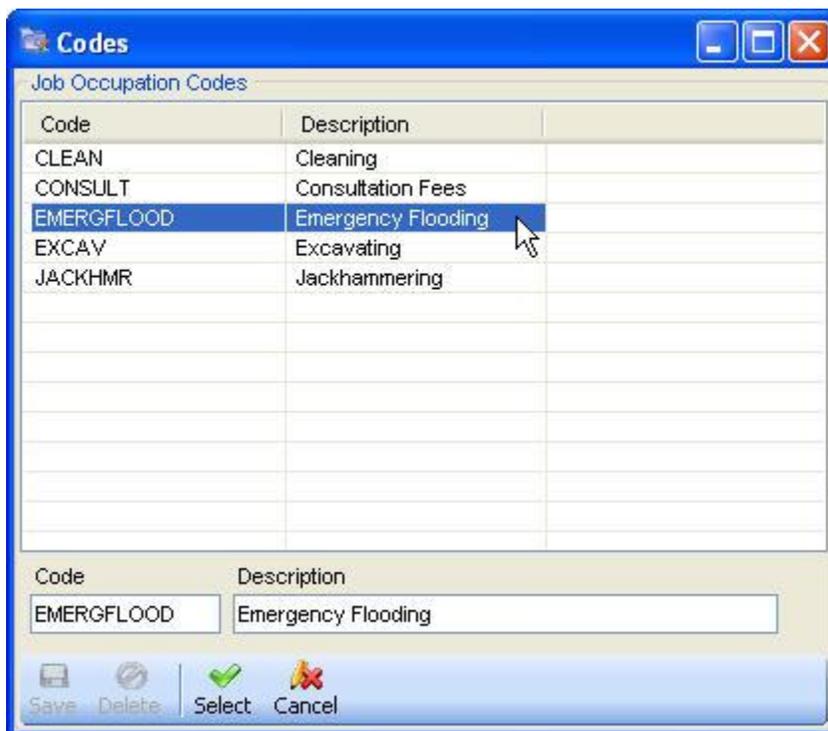
5. If using dynamic costs and the job code is needed to override the cost codes, right-click in the **Job Code** field to open the **Codes** box for selecting the code.

**NOTE:** Static or dynamic costs are set up by domain under the **Preferences** option, **Use Dynamic Costs**, and determine whether the software lists **Rate Types** or **Cost Codes**; the default **Rate Types** are used for **N** and **Cost Codes** for **Y**.

Name	Rate	Job Code	SWING
CHARLES, RYAN	\$24.00	=====	25.00%
HENRY, WILL	\$23.00	=====	25.00%

Name	Rate	Job Code	SWING
CHARLES, RYAN	\$25.00	EMERGFLOOD	25.00%

Double-click on the selected code (or select and click the **Select** button) to load the **Job Code** and override the regular rate.



6. Select the employee(s) or contractor(s) from the list to add to the work order. At least one of the employees or contractors must be selected or this message box opens to remind the user.
7. Check the box(es) for the **Rate Types** or **Cost Codes** if different than **Regular** or in addition to the **Regular** rate. Click in a checkbox to uncheck a **Rate Type** or **Cost Code**.

**NOTE:** **Cost Codes** are customized by each organization for tracking labor and usually reflect the method used prior to implementing Cityworks so users will be familiar with those customized types.

8. If desired, select the radio button option for how to display **Cost**.

**NOTE:** The default setting for which **Cost** option to display is preset according to the **Use Dynamic Costs** setting in **Preferences**.

- **Show Static**—Use for the regular default rates from the **Employees** tab of the **Employees** window.
- **Show Dynamic**—Use for **Cost Codes** or **Job Codes**.
- **Show Both**—Use to see both static and dynamic costs when static costs existed before switching to cost codes. The active code is shown in black text; the inactive code in gray text.

**NOTE:** If both static and dynamic costs exist, they will be totaled together in the **Estimated Labor Costs** shown at the bottom left. These costs are used on the **Budget Plan** tab so it is recommended that the organization set up one or the other for each template, but not both.

Static Cost Codes			Dynamic Cost Codes		
Name	Type	Group	Name	Type	Group
CHARLES, RYAN	Employee	MAINTENANCE WORKER	CHARLES, RYAN	Employee	MAINTENANCE WORKER
HENRY, WILL	Employee	MAINTENANCE WORKER	HENRY, WILL	Employee	MAINTENANCE WORKER
PULLMAN, JOHN	Employee	MAINTENANCE WORKER	PULLMAN, JOHN	Employee	MAINTENANCE WORKER

Estimated Labor Costs: \$345.00

9. Enter the estimated **Hours**.
10. If desired, enter a **Description**.
11. Click the **Add** button to list the employee(s) or contractor(s) in the list on the lower pane along with the total **Estimated Labor Costs** at the bottom.

Name	Type	Group	Con...	RateType	Hours	Cost	Description
CHARLES, RYAN	Employee	MAINTENANCE WORKER		Hourly	4.00	96.00	
LYONS, JAMES	Employee	MAINTENANCE WORKER		Hourly	4.00	92.00	
PULLMAN, JOHN	Employee	MAINTENANCE WORKER		Hourly	4.00	88.00	
CHARLES, RYAN	Employee	MAINTENANCE WORKER		Hourly	2.00	48.00	Emergency flooding
LYONS, JAMES	Employee	MAINTENANCE WORKER		Hourly	2.00	46.00	Emergency flooding
PULLMAN, JOHN	Employee	MAINTENANCE WORKER		Hourly	2.00	44.00	Emergency flooding

Estimated Labor Costs: \$414.00

12. Add labor for all employees and/or contractors needed for this work order template.

To modify labor, add the correct information and select the entries to remove from the list, and click the **Remove** button. Click **Yes** when the confirmation box opens to remove the item(s) from the list.

## Materials Tab

The **Materials** tab attaches predefined materials to the work order template which are then listed on each work order of this type.

1. Switch to the **Materials** tab.

Work Order Templates: Road: Resurface

Budget Plan

General Tasks Labor **Materials** Equipment Misc. Info Printing Security

Material Search

Search By Keyword  
Hierarchy PATCH

MaterialUID	Description	Unit of Measure	Unit Cost	Manufa...	Supplier	Model	Part No.	Mini
ColdPatch	Cold Patch Asphalt	SqYd	50					0
Gravel	Gravel	SqYd	10					0
HotPatch	Hot Patch Asphalt	SqYd	50					0
Sand	Sand	SqYd	12.5					0

Units Required: 2

Add Clear Remove Contractor

MaterialUID	Description	Units Required	Cost	Source
Gravel	Gravel	5	50	Inventory
ColdPatch	Cold Patch Asphalt	10	500	Inventory
HotPatch	Hot Patch Asphalt	10	500	Inventory

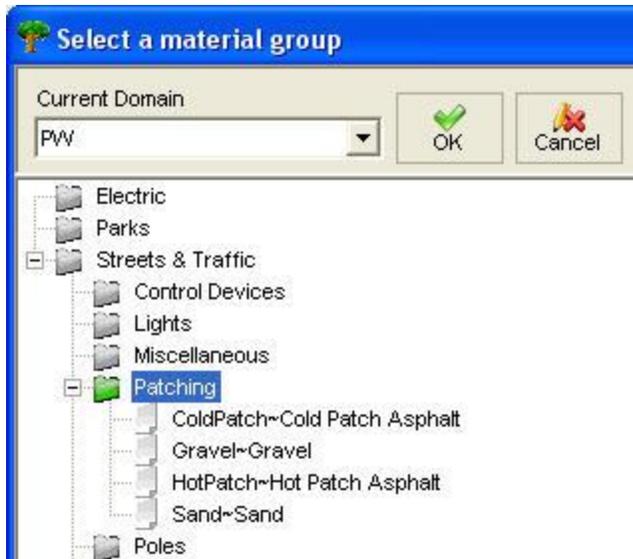
Estimated Material Costs: \$1,050.00

2. Load the desired material(s) into the center pane by selecting the **Search By** option for material **Name** or **Hierarchy** or typing in a **Keyword** and pressing **Enter**.

**NOTE:** *Hierarchy* or *Keyword* can be used to list multiple materials at a time.

Selecting **Name** loads all the materials into the table.

**Hierarchy** opens a selection box from which a folder of materials can be selected.



3. Select the material(s) from the list.

**TIP:** Multiple materials may be added at the same time if the same number of units of each material is wanted.

4. Type in the estimated number of **Units Required** if different than **1**.
5. Click the **Add** button to list the material on the lower pane and generate the **Estimated Material Costs** at the bottom of the window.
6. Add other materials in the same manner until all desired materials have been added.

**TIP:** The only way to change an entry in the list is to add a new one and remove the incorrect one.

### Contractor-Provided Materials

If a contractor typically provides some of the materials as well as the labor, these material costs can be added to the work order template. The total cost is listed along with the units provided so there is no calculating performed using the cost per unit.

1. If a contractor provides the material, select the material from the list and click the **Contractor** button to open the **Contractor Material Cost** box loaded with the material **ID** and **Description**.

Contractor Name: Timberline Construction Co.

Add Material Cost

ID	Total Cost	Description	Units
Sand	900.00	Sand	40
		Sand	40

OK Cancel

2. Type in the **Contractor Name** or double-click in the field to open a **Select a Contractor** box with the contractor hierarchy and select a contractor.

Select a Contractor

Current Domain: PW

OK Cancel

- Construction
  - Excavation
  - General Contractors
    - Timberline Construction Co. ~ Construction services
  - Consulting
  - Inspection
  - Maintenance

3. Type in the remaining information and click **OK** when finished to add the information to the lower pane.

**NOTE:** Contractor **Total Cost** is the total cost for the number of units entered.

MaterialUID	Description	Units Required	Cost	Source
ColdPatch	Cold Patch Asphalt	10	500	Inventory
HotPatch	Hot Patch Asphalt	10	500	Inventory
Gravel	Gravel	5	50	Inventory
Sand	Sand	2	25	Inventory
Sand	Sand	40	500	Timberline Construction Co.

## Equipment Tab

Equipment can be added to the work order template to aid the user in selecting the equipment used when filling out the work order and is also used as a cost estimate. Each piece of equipment with a unique ID represents 1 equipment unit. Multiple units are used only for those items, such as barricades or small hand tools, which are not uniquely identified.

1. Switch to the **Equipment** tab.

Work Order Templates: Road: Surface Reconstruction - AC

Budget Plan | Inspections

General | Tasks | Labor | Materials | **Equipment** | Misc. Info | Printing | Security

Equipment Search

Search By:  Keyword

NAME

ID	Description	Unit Cost	Rate...	Manufacturer	Model
RODHDAUGER	Square auger hand rodding attachment	.00	A	Miller Metal	T390L
RODHDLIN	Hand line rodding line	.00	A	Tiger Tool	F5439K
RODTRAILER	Hand rodding trailer	57.50	B	Puhlman, Inc	
RODTRUCK	Hand rodding truck	29.95	A	Symczyk	P990
ROLLERVBR37	R37 Vibrator Roller	37.88	A	Wilson Machinery	R37-009
SCTS_SPREADER	Scotts rotary spreader for the JD 4400	.43	A	Scotts	TC3000
SEWERBALL	Mega 200 sewer ball	.00	A	Mortenson, Inc.	Mega20C
SFTYFNC	Safety Fencing	.00	A	Aaron Industrial	109L

Hours Required:  Units Required:

**Add** | Clear | Remove | Contractor

Equipment	Description	Hours Required	Units Required	Rate Type	Cost
ASPHLTGRNDR	Titan MT-6520 Asphalt Grinder	4	1	FIXED	37.5
ASHPALTLAYER	Asphalt layer	4	1	FIXED	37.5
TRUCKDMP24	White 12000 GVW dump truck # 24	4	1	FIXED	38.54

Estimated Equipment Costs: \$113.54

2. Select the equipment needed using **Name** or **Hierarchy** from the **Search By** dropdown or type in a **Keyword** and press **Enter** to load the equipment on the center pane.

**NOTE:** These selections are similar to those found on the **Labor** and **Material** tabs and work the same way. Multiple selections may be loaded at a time using **Hierarchy** or **Keyword**.

3. Select the desired equipment from the list.
4. Enter the **Hours** needed for the selected equipment item.
5. Enter the **Units Required** if more than **1** item is needed and each item does not have a unique ID.
6. Click the **Add** button to add the equipment to the work order template and to list it on the lower pane with the **Estimated Equipment Costs**.

Equipment	Description	Hours Required	Units Required	Rate Type	Cost
ASPHLTGRNDR	Titan MT-6520 Asphalt Grinder	4	1	FIXED	37.5
ASHPALTLAYER	Asphalt layer	4	1	FIXED	37.5
TRUCKDMP24	White 12000 GVW dump truck # 24	4	1	FIXED	38.54
ROLLERVBR37	R37 Vibrator Roller	2	1	FIXED	37.88

Estimated Equipment Cost: \$151.42

### Contractor-Provided Equipment

A contractor may also provide equipment along with labor and/or materials. These equipment costs can also be added to the work order template, similar to adding contractor-provided materials.

1. If a contractor provides the material, select the equipment from the list and click the **Contractor** button to open the **Contractor Equipment Cost** box loaded with the equipment **ID** and **Description**.

MaterialUID	Description	Unit
S20FLSWITCH	S20 float switch	
Sand	Sand	SqYd
SAWOAK	Saw tooth Oak	EA

Units Required: 1

Buttons: Add, Clear, Remove, Contractor

2. Type in the **Contractor Name** or double-click in the field to open a **Select a Contractor** box with the contractor hierarchy and select a contractor.

**Contractor Equipment Cost**

Contractor Name: Timberline Construction Co.

Add Equipment Cost

ID	Total Cost
TRUCKWATER	400.00

Description	Units	Hours
Weider water truck	1	2

Buttons: OK, Cancel

3. Type in the remaining information and click **OK** when finished to add the information to the lower pane.

**NOTE:** Contractor **Total Cost** is the total cost for the number of units and hours entered.

Equipment	Description	Hours Required	Units Required	Rate Type	Cost
ASPHLTGRNDR	Titan MT-6520 Asphalt Grinder	4.00	1	FIXED	37.50
ASHPALTLAYER	Asphalt layer	4.00	1	FIXED	37.50
TRUCKDMP24	White 12000 GVW dump truck # 2	4.00	1	FIXED	38.54
ROLLERVBR37	R37 Vibrator Roller	2.00	1	FIXED	37.88
TRUCKWATER	Weider water truck	2.00	1	FIXED	400.00

Estimated Equipment Costs: \$551.42

Scroll across to view additional fields.

## Misc. Info Tab

Miscellaneous information adds predefined comments, instructions, and attachments which will be automatically included on each new work order of this type.

1. Switch to the **Misc. Info** tab.

Work Order Templates: Pressurized Water Main: Install Main

Budget Plan Inspections

General Tasks Labor Materials Equipment Misc. Info Printing Security

**Comments**

Contact the Planning Commission at 575-8988 with any questions.

**Instructions**

Inspect the following items as the pipe is laid.

1. Pipe bedding placed to prescribed depth and grade.
2. Pipe laid to grade with joints made in accordance with manufacturer's instructions.
3. Double-check pipe gradient with spirit level along the top of the pipe barrel.
4. Interior free of bedding materials, dirt, boards, or other debris.

Save

**Attachments**

Add Remove

Attachment
\\Datahead\clientservices\Documentation\PDF\Misc\Inspection_Water.pdf

2. Type in any **Comments** and/or **Instructions**.
3. Click the **Save** button.
4. Click the **Add** button to open a **Select attachment file(s)** browser box for locating the desired file. Attach as many files as desired.

## Printing Tab

The **Printing** tab sets the preferences for the default printing parameters for the work order template, including selecting a printer and specifying map information. Skip this section if the organization does not print work orders.

Custom templates can be created by the organization to print paper documents for each work order type and must be stored in the **Templates** file of the **Cityworks** directory. Custom template names can be no longer than 8 characters. Custom map templates may also be created for printing maps using the ArcMap layout function. Map template names may be 250 characters maximum.

**NOTE:** See [Customizing Print or Email Templates](#) for more information.

**IMPORTANT:** Azteca Systems Inc. recommends keeping a master copy of all custom templates in another location to facilitate the installation of future versions of Cityworks.

1. Switch to the **Printing** tab.

The screenshot shows the 'Printing' tab of the Cityworks software. The window title is 'Work Order Templates: Fire Hydrant Feature: Fire Hydrant Maintenance'. The 'Printing' tab is selected. The 'Template Settings' section includes a text field for 'Microsoft Word Template' containing 'WOWater', a numeric spinner for 'Days before Projected Start Date to be available in Print Queue' set to '2', a dropdown for 'Default Printer' set to 'CutePDF Writer', and radio buttons for 'By default print' with 'Work Order' selected. The 'Map Settings' section includes a text field for 'Default Map Template', a numeric spinner for 'Print map with scale (x) times the extent of the selected set' set to '2', and radio buttons for 'Single Map for ALL Features' (selected) and 'Individual Map for EACH Feature'. At the bottom are 'Save' and 'Clear' buttons.

2. If desired, enter the name of a customized **Microsoft Word Template**, 8 characters or less in length.

**NOTE:** Leave the **Microsoft Word Template** field blank to use the default Cityworks template, (pw.dot).

3. Enter the number of days before the work order type lists in the **Print Queue**.

**TIP:** If using the internal email option for **WO Print Queue** as the event, the number set for the **Days before Projected Start Date** determines when the **Submit To** person receives email notification that the work order is in the **Print Queue** and is ready for printing.

4. If desired, select the default printer to which this work order type is printed.

**NOTE:** If the default printer is left blank, the work order prints on the user's default printer.

5. Select the **By default print** radio option for **Work Order**, **Map**, or **Both**.

To automatically activate the **Map printing options** box on the work order **Print** tab, the administrator must select the **Map** or **Both** option on the Designer **Printing** tab. The user can also activate the box by selecting either **Print Map Only** or **Print Both** on the work order **Print** tab or deactivate it by selecting **Print WO Only**.

6. If printing the map, select the **Map Settings** on the right pane.

- **Default Map Template**—Type in the name if there is a custom ArcGIS layout or double-click in the field to open a browser box for locating the file.

**NOTE:** The default location for .mxt files is in **Program Files > ArcGIS > Bin > Templates** directory.

- **Print map with scale (x) times the extent of the selected set**—Type the desired number in the blank to determine how much space around the selected set is included in the printed map. The default is set at **2** which adds either half the length or width of the selected set to each side, adding more background. Set to **1**, the map prints the selected set to the margins with no additional background in either width or length.
- **Single Map for ALL Features**—Select this radio button to print a single map containing all of the features attached to the work order.
- **Individual Map for EACH Feature**—Select this radio button to print an individual map for each feature attached to the work order.

**NOTE:** By default, the map is set to print in a portrait layout.

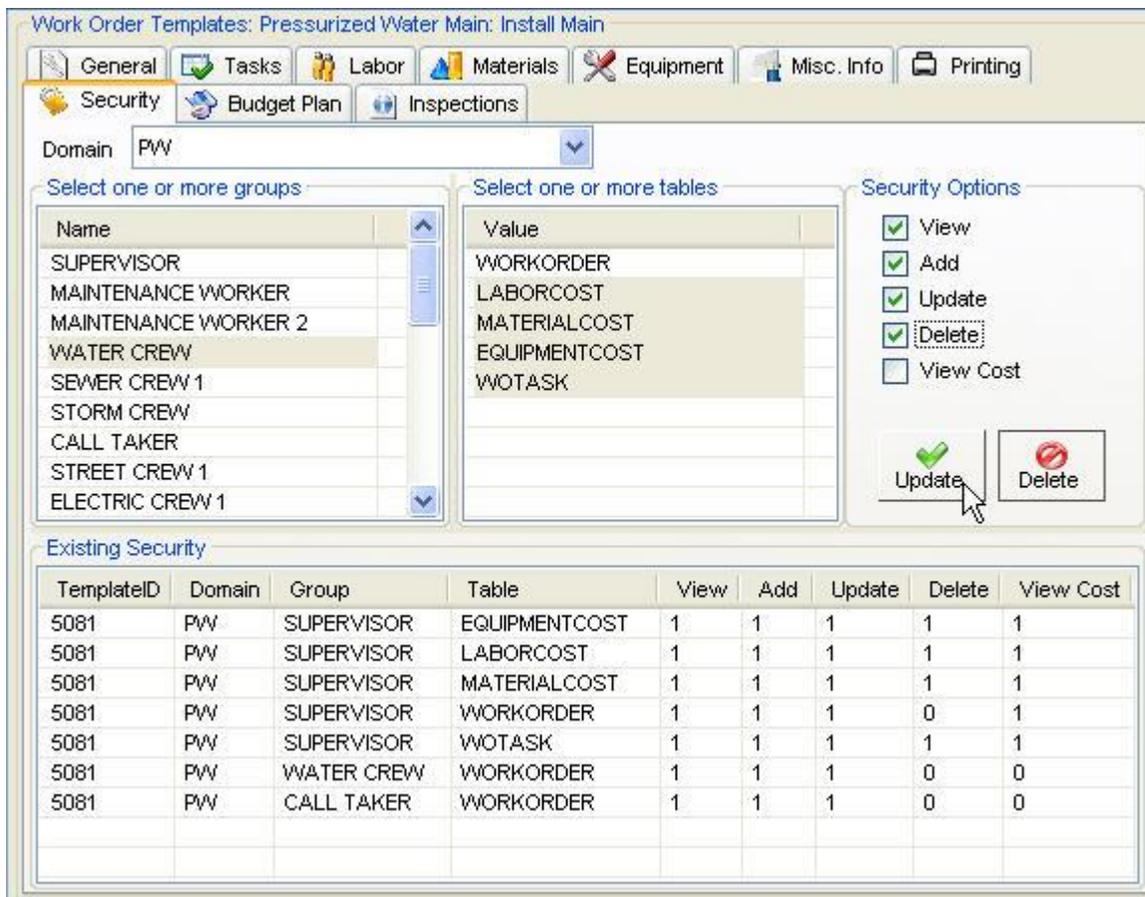
7. Click the **Save** button to save the selected information.

## Security Tab

The **Security** tab sets the group permissions for who has what access to the work order type. In 2012.1, the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool.

**NOTE:** Security may be set for multiple work order templates on the **Cityworks Setup > Template Security**.

1. Switch to the **Security** tab.



2. Select the group on the left pane.
3. Select the work order table(s) from the center pane that the selected group needs to access.
4. Check the applicable box(es) for **Security Options**.
  - **View**—Permission to open a work order to view the information only.
  - **Add**—Permission to create and add information to a work order, such as comments, labor, materials, equipment, tasks, etc.
  - **Update**—Permission to edit work order information and change the **Submit To** employee on a work order after it has been saved.
  - **Delete**—Permission to delete work order information.

**IMPORTANT:** Users who are adding labor, material, and equipment costs need **Delete** permission for the **LaborCost**, **MaterialCost**, and **EquipmentCost** tables in case the values entered need to be modified.

**NOTE:** Azteca Systems Inc. does not recommend deleting work orders from the **WorkOrder** table; cancelling a work order is the recommended method of inactivating a work order because it still allows for viewing the information and leaves the historical information intact. Limit the users with **Delete** permission to **WorkOrder**.

- **View Cost**—Permission to view costs. Check **View Cost** for the **LaborCost** table to allow a group rights to view the labor costs on the **Labor** pane of the work order. Check **View Cost** for

the **LaborCost**, **MaterialCost**, and **EquipmentCost** tables to display the **Work Order Cost Summary** form from a work order, accessed from the **Tools** menu.

**NOTE:** All employees can view costs for materials and equipment on the right pane of a work order.

5. Click the **Update** button to add the information to the **Existing Security** list on the lower pane.
6. Continue adding all the desired groups by repeating steps 2-5.

## Budget Plan Tab

The **Budget Plan** uses information from the **Labor**, **Materials**, and **Equipment** tabs to project a budget for the work activity. A **Daily Budget** and **Total Budget** are displayed on the tab. These budget projections can be saved by year.

**TIP:** If different areas need different budgets for the same work template, a work order template may be cloned to project these budgets separately. See section on [Cloning Work Order Templates](#). Cloning a work order template does not clone budget information.

Gray fields are user-defined in a **Codes** box by entering the desired **Code** and **Description** to match whatever the organization wishes to track. White fields indicate fields where numeric data is entered. Calculations are based on the information entered so changing the values yields different results and can be used to obtain the desired results. **Crew Days** and **Labor Days** fill in when the **%** is entered for the month. Red text in the **Target** column indicates that further adjustments in the budget plan are necessary to reach the desired target; green text indicates the projection plan is on target.

Budget plans can be compared to the actual work accomplished on the **Budget Reports** tab in the **Cityworks Report Engine** of the Cityworks Desktop software. They can be used to more accurately predict future budgets and determine cost projection, productivity, optimal crew size, etc. The gray, user-defined fields can be used to group the results.

Tracking work progress against the desired or anticipated levels at regular intervals promotes crew accountability and efficiency, improves data quality and more accurate tracking of the material inventory needed, and provides administrators with reliable indicators for infrastructure management decisions. Budget plans can play an important role in a work management system.

Some settings in **Others > Preferences** determine the layout and selection on the **Budget Plan** tab. The year shown begins with the month selected for the **First Month of the Fiscal Year**. The **Default Workday Hours** and **Default Applied Overhead Percent** load in the corresponding fields. The **Budget Range Years** determines the years that are listed in the **Budget Year** dropdown selection.

Others	Use Equipment Checkout	Y
Units of Measure	Use CCTV Codes	Y
Codes	First Day of Week	Sunday
Custom Data Fields	Use Dynamic Cost Codes	Y
Preferences	First Month of Fiscal Year	January
I/I Quantity Matrix for Smoke Testing	Default Workday Hours	8
Map Layers and Fields	Default Applied Overhead Percent	105
Customer Accounts	Default Budget Range Years	5
CU Material Groups	Geodatabase Asset Groups Owned by SDE	N
Macro Manager	Default Inspection Status - New	
Record Lock	Default Request Caller Type	
Other System Codes	Auto format phone numbers	Y

The following calculations are performed by the software.

**NOTE:** *Avg. Crew Size* is imported from the **Labor** tab. **Daily Budget** populates the **Labor, Materials, and Equipment** with the totals set up on the respective tabs and totals these together for the total **Daily Budget**.

- **Crew Days = Work Qty ÷ Avg Daily Production**
- **Unit Cost = Total Budget ÷ Work Qty**
- **Labor Hours/Day = Workday Hours x Avg Crew Size**
- **Total Budget = Daily Budget x Crew Days** (for **Labor, Materials, Equipment**, and totals these three items in the **Total Budget**)

1. Switch to the **Budget Plan** tab.

**IMPORTANT:** *If at any point during the data entry, you need to switch tabs to **Labor, Materials, Equipment**, or any other view, always save the information already entered as the **Budget Plan** tab reverts back to the last view saved when it is reopened.*

Work Order Templates: Water Main Feature: Flush Water Main

General Tasks Labor Materials Equipment Misc. Info Printing Security

Budget Plan Inspections

Management

Fiscal Year: 2014  Lock Budget

Management Unit: SE Southeast quadrant Activity Program: QLTYCMPT Water c

Unit Description: PIPELENGTH Pipe length in feet Activity Code: CLSDMT Clean s

Cost

Inventory: 132.00 Pressurized water mains

x Effort Level: 1 Average

Work Qty: 132.00 Each

Avg Daily Production: 5.00 Pressurized water mains

Workday Hours: 8 Avg Crew Size: 26.40

Applied Overhead: 105% Crew Days: Unit Cost: Labor Hours/Day

Daily Budget

Labor

Materials

Equipment

Total Budget

Labor

Materials

Equipment

Work

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Target
Percent	0	4	11	11	11	11	11	11	11	11	4	0	96	
Crew Days	0	1	3	3	3	3	3	3	3	3	1	0	26	26
Labor Days	0	6	18	18	18	18	18	18	18	18	6	0	156	

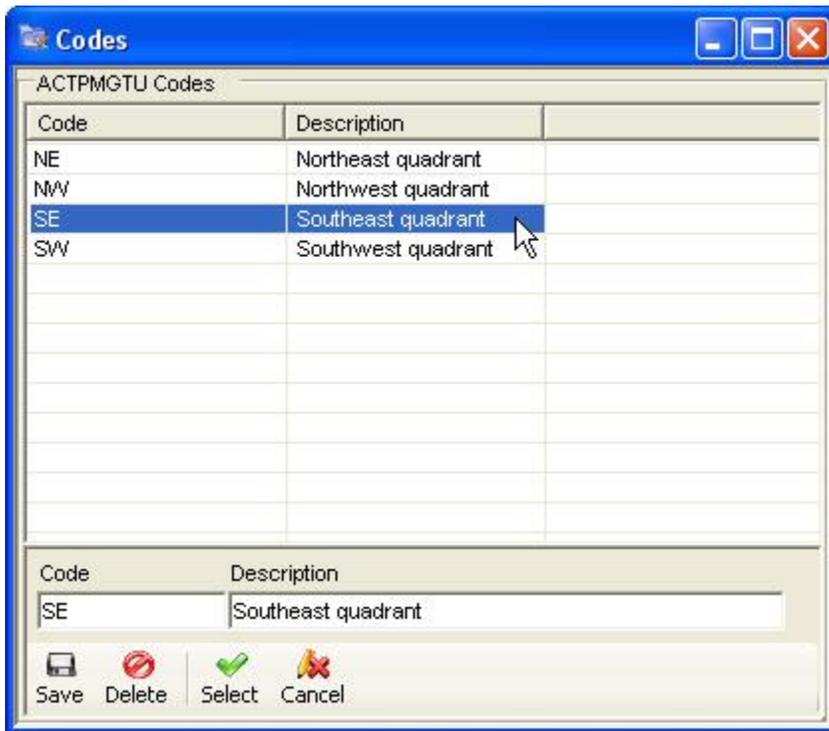
Save Clear Delete Print

Budget Year	Management Unit	Unit Description	Activity Program	Activity Code	Inventory	Invent

2. Select the desired **Fiscal Year** from the dropdown or type it in the field.
3. Double-click in each of the gray boxes in the **Management** frame to open a **Codes** box and type in a **Code** and **Description** in the fields at the bottom and click the **Save** button to save to the list. Add as many codes as needed. Double-click (or select and click the **Select** button) to load the information in these fields.

**NOTE:** These description fields may be used for any information the organization wishes to track in association with the work order template. The **Code** and **Description** are fully customizable for each field in the **Management** and **Cost** sections. Possible examples are shown for each.

- **Management Unit**—Use for dividing an area into geographic zones or management units, especially if accounting and reporting is managed separately.



- **Unit Description**—Use to describe how the management unit is divided or to detail the asset inventory for the work activity.

Code	Description
CUYD	Cubic yards
EA	Each
LNFT	Linear feet
RDMI	Road miles

- **Activity Program**—Use to describe the work activity program.

ACTPPRGC Codes	
Code	Description
ADMIN	Administration
ASPHLT	Asphalt work
CONCR	Concrete
DRAIN	Drainage
MISC	Miscellaneous
RDMRK	Road markings
SH	Shoulders
SIG	Signs/signals
SIGNS	Signs
SNOw	Snow removal
SW/TR	Sweeping/trash
TRAF	Traffic

- **Activity Code**—Use to further describe the activity.

ACTPCODE Codes	
Code	Description
201	Potholes
301	Road construction
401	Fog seal
501	Protective measures
520	Stabilize road
550	Traffic plan review

4. Type the **Inventory** in the **Cost** frame and double-click in the gray field to open another **Codes** box. Type in the desired codes and descriptions for the **Inventory** as described in step 3 and load the desired **Description** in the field.

ACTPPRGC Codes	
Code	Description
FLNEW	Flush newly installed main
FLREPAIR	Flush repaired main
QLTYCMPT	Water quality complaint
QLTYCTRL	Quality control

ACTPINVT Codes	
Code	Description
LAT	Lateral lines
MAINS	Mainlines
MNHOLE	Manholes
RDMI	Road miles

5. Type the multiplier in the **x Effort Level** field and double-click in the gray box next to **x Effort Level** to open another **Codes** box for defining the codes and descriptions for the **Effort Level**. Follow the same procedure described in step 3 to load the desired **Description** in the field.

**NOTE: Effort Level** can be used to express the quantity of work expected per asset, such as the average number of potholes per mile, or it may indicate the job requires more effort in certain terrain or weather conditions. The **Effort Level** multiplier may be a 2-place decimal.

ACTPELEV Codes	
Code	Description
1	Average
2	Medium
2.3	Average potholes per road mile
3	High

6. Double-click in the field to the right of the **Work Qty** field to open a **Codes** box and follow the same procedure described in step 3 to load the desired **Description** in the field.

**NOTE:** *Work Qty* is automatically populated and calculated by multiplying the **Inventory** by the **Effort Level**.

ACTPWKQD Codes	
Code	Description
GROUP	Group of items
INDIV	Individual items
SET	Set of like items

7. Type the average number of assets from the **Inventory** for which the work activity can be completed in one day in the **Avg Daily Production** field and double-click in the description field to open the **Codes** box. Follow the same procedure described in step 3 to load the desired **Description** in the field.

**NOTE:** A decimal may be entered in the **Avg Daily Production** field to indicate the portion of the work that can be completed in a day. For example, if it takes four days to complete work on one asset, enter **.25**.

ACTPAVDP Codes	
Code	Description
PRSSMAIN	Pressurized water mains
SGMT	Segments

8. If desired, enter the **Workday Hours** and/or **Applied Overhead** if different than the default settings set in **Preferences**.

**NOTE:** **Applied Overhead** may reflect any additional costs, such as for utilities, maintenance of equipment, the average benefits package per department or crew, etc.

9. In the **Work** section, type in the **Percent** of the job that needs to be accomplished per month. Use **<Ctrl + R>** to fill in the boxes forward if the same value is wanted for each month.

**NOTE:** **<Ctrl + R>** overrides any information already entered. The **Crew Days** and **Labor Days** of the work completed are calculated according to the **Avg Crew Size** displayed above when the **Percent** is entered. **Crew Days** and **Labor Days** can be modified if desired by typing in the field.

Work														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Target
Percent	0	0	7	10	16	15	15	15	15	7	0	0	100	100
Crew Days	0	0	34	48	77	73	73	73	73	34	0	0	485	484
Labor Days	0	0	102	145	232	218	218	218	218	102	0	0	1453	1450

10. Modify the information as needed to match the targets.
11. If desired, check the **Lock Budget** box to prevent any changes from being made to the budget. All fields with the exception of **Budget Year** are grayed out as well as all the buttons except for **Save** and **Print**.

**TIP:** Locking the budget for prior years keeps the information intact so that the values cannot be changed by refreshing or accidentally modifying the information.

12. Click the **Save** button to save the budget to the list at the bottom of the pane.

Work Order Templates: Road: Repair Pothole

General Tasks Labor Materials Equipment Misc. Info Printing Security Budget Plan

**Management**

Fiscal Year: 2006  Lock Budget

Management Unit: SE Southeast quadrant Activity Program: ROADMAIN Road maintenance

Unit Description: RDMILES Road miles Activity Code: POTHOLE Pothole repair

**Cost**

Inventory: 1000.00 Road miles

x Effort Level: 9.67 Potholes per road mile

Work Qty: 9670.00 Individual items

Avg Daily Production: 20.00 Potholes

Workday Hours: 8.00

Applied Overhead: %

Avg Crew Size: 3.00  
Crew Days: 483.50  
Unit Cost: \$57.19  
Labor Hours/Day: 24

Daily Budget: \$1,143.71  
Labor: \$569.44  
Materials: \$500.00  
Equipment: \$74.27

Total Budget: \$552,983.79  
Labor: \$275,324.24  
Materials: \$241,750.00  
Equipment: \$35,909.55

**Work**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Target
Percent	0	0	7	10	16	15	15	15	15	7	0	0	100	100
Crew Days	0	0	34	48	77	73	73	73	73	34	0	0	485	484
Labor Days	0	0	102	145	232	218	218	218	218	102	0	0	1453	1450

Save Clear Delete Print

If the **Total** does not match the **Target** (if there are any red numbers in the **Target** column), a message box opens to warn the administrator. If the **Total** is close enough, click **Yes** to save the budget plan as is. Click **No** to modify the plan.

**Work**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Target
Percent	8	8	9	10	9	8	8	8	8	8	8	8	100	100
Crew Days	39	39	44	48	44	39	39	39	39	39	39	39	487	484
Labor Days	116	116	131	145	131	116	116	116	116	116	116	116	1451	1450

Once a budget plan is saved, it may be opened by selecting it from the list at the bottom or from the **Budget Years** dropdown selection at the top. Scroll across to view the rest of the fields.

To create a budget for another year, select the **Budget Year** from the dropdown selection. A message box opens to see if the same settings are wanted as the year currently displayed. Click **Yes** to import the information and make any necessary modifications; click **No** to clear the information and begin again.

The **Refresh** button allows the administrator to apply changes on the **Labor**, **Materials**, and **Equipment** tabs for updating costs.

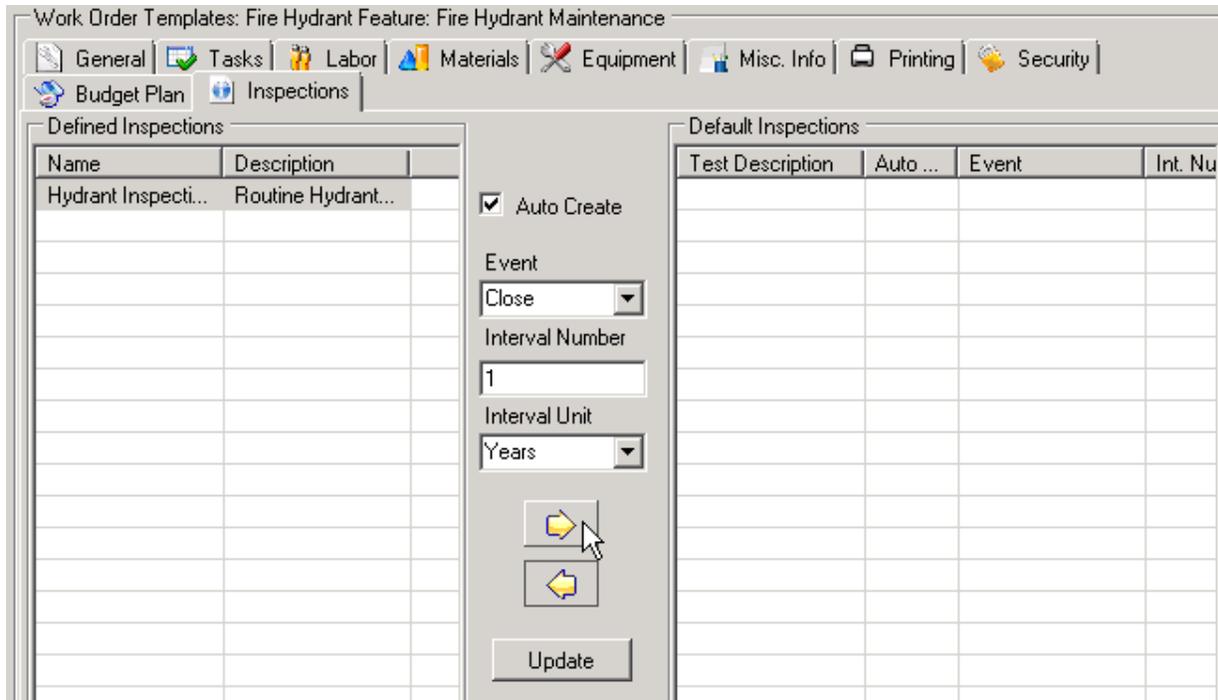
***IMPORTANT:*** If changes have been made to labor, materials, or equipment, do not refresh budget costs for prior years.

## Inspections Tab

The **Inspections** tab for Cityworks Server AMS users allows default custom inspections to be linked to the work order to automatically create the inspection every time a work order of this type is created. Create the inspections under **Cityworks Setup > Custom Inspection Templates** and select the desired asset type(s) for the inspection to list the inspections on this tab.

**NOTE:** Refer to [Custom Inspection Templates](#) for information on how to create these inspections.

1. Switch to the **Inspections** tab.



2. Select the inspection from the panel on the left. Use **Ctrl** or **Shift** to make multiple selections.
3. To create associated inspections, follow these steps:
  - Check the **Auto Create** checkbox.
  - Select either **Initiate** or **Close** from the **Event** dropdown. Select **Initiate** if you want the inspection interval to begin from the date that the work order is initiated. Select **Close** if you want the inspection interval to begin from the date that the work order is closed.
  - Enter an **Interval Number**.
  - Select an **Interval Unit (Days, Weeks, Months, or Years)**.
4. Click the right arrow to save the selected inspection(s) as **Default Inspections**.

**NOTE:** Double-clicking on an inspection moves it to the other list. An inspection only shows up on one list at a time but can easily be moved from one to the other.

5. Click the **Update** button to add the information to the Cityworks Database.

## Cloning Work Order Templates

Once all the setup has been completed for a work order template, the settings can be applied to new templates by using the cloning functions on the **General** tab. Templates can be cloned to the same asset using the **Clone** button or a description can be applied to other assets using the **Clone to Entities** button.

The **Clone** button adds new work order templates to the selected asset type.

1. Select the desired asset and a work order template with the desired information to clone.
2. Click in the **Description** field and enter a new **Description** to activate the **Clone** button.



3. Click **Clone** to copy all the information set on the tabs over to the new work order template.

**NOTE:** Cloning does not add information to the **Budget Plan** tab. This must be set up by year for each template.

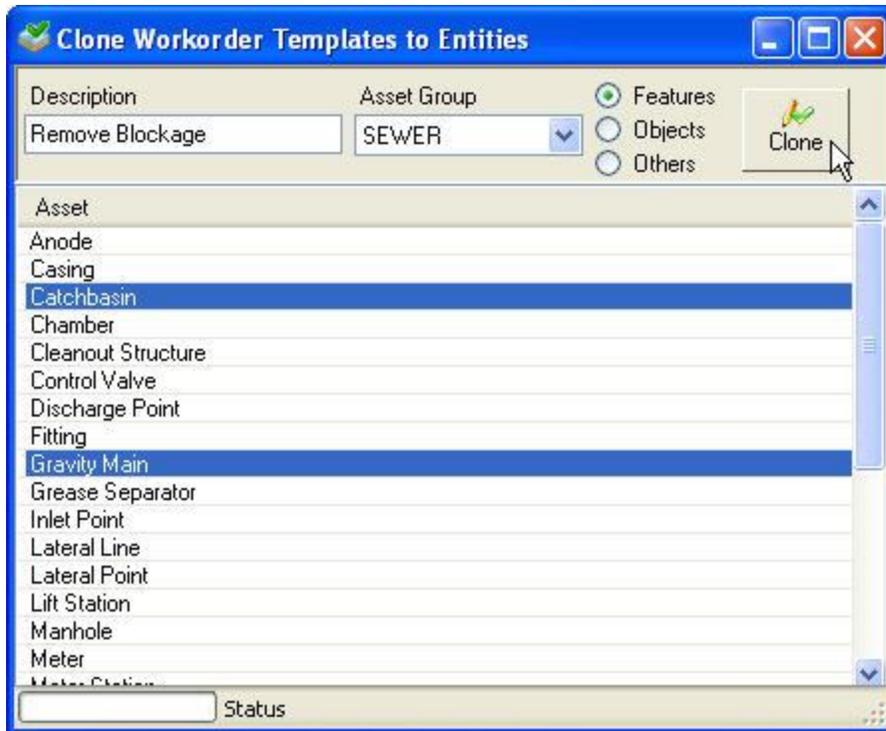
4. Check the information on the tabs and modify as needed for the new work order activity.

The **Clone to Entities** button applies the selected work order activity and all its settings to additional assets.

1. Select the desired work order **Description** to clone to other assets.
2. Click the Clone to Entities button to open the Clone Workorder Templates To Entities box.



3. Select the desired asset group from the **Asset Group** dropdown.



4. Select the radio button option for **Features** (default setting), **Objects**, or **Others**.
5. Select the desired asset(s) from the list, using the **Shift** or **Ctrl** key for multiple selections.
6. Click the **Clone** button.

A progress bar opens at the bottom of the box until the cloning is complete.



7. Click **OK** when the **Summary** box opens to say the clone is complete.
8. If desired, change the **Asset Group** and/or radio button option and select any additional assets to which to apply this work order **Description**.
9. If desired, modify the **Description** and repeat steps 2-6 to clone additional templates.
10. When cloning is complete, close the box.

## Custom Field Templates

**Custom Field Templates** adds custom fields to requests, work orders, and predefined inspections or tests.

Custom Field Templates

Define Custom Categories

Apply to Table  
WORKORDER

Existing Categories

Category	Active	Description
ACCOUNTNUM	Y	Account number
ADOPT-A-STREAM	Y	Adopt-A-Stream
ATTRIBUTE	Y	Attribute data fo
BUILDINGS	Y	Buildings
BULKTRASH	Y	Bulk Trash Picku
CBCLEAN	Y	Catch Basin Cle:

Add/Modify  
SEWER

Description  
Sewer

Inactive  
 Active

The delete button should only be used when the category has not been used in a work order or a service request. Otherwise set this flag to inactive to prevent future use.

1. Select **Request**, **WorkOrder**, or a predefined inspection or test from the **Apply to Table** field.
2. Type the desired **Category** in the **Add/Modify** field and add a **Description** OR select from the **Existing Categories** list.
3. Click **Save**.
4. In the panel on the right, enter the **Field Name**.
5. Select the **Field Type** from the dropdown selection. If additional information is needed, related fields are displayed.

- **Date**

Define Custom Fields

Field Name

Field Type  
DATE

Is visible?  
 Is required?  
 Always sort by code?

Default Value

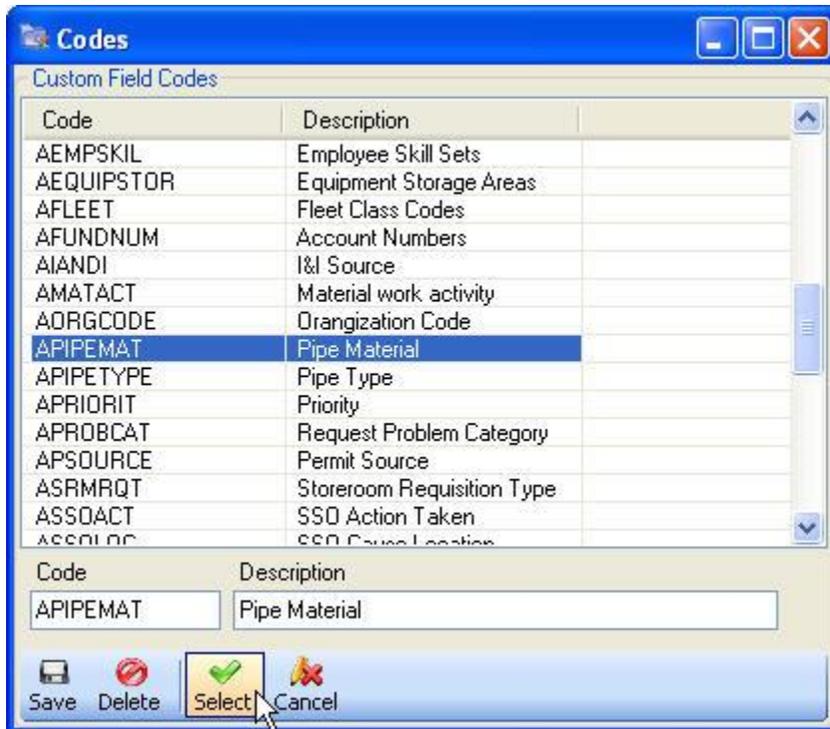
- **Numeric**—Opens **Min Value** and **Max Value** fields for setting the minimum and maximum ranges for defining valid values.

**TIP:** Beginning with Cityworks 4.5 sp 5, the software now validates that a number was entered. Prior to this release, if no valid values were entered (at least the **Min Value**), no restrictions were placed on the type of data a user could enter.

- **Varchar**—Opens a **Code Type** field and radio button options for **Use Description** or **Use Code** to designate whether to display the code or the description on the work order. For free-form response, leave the **Code Type** blank.

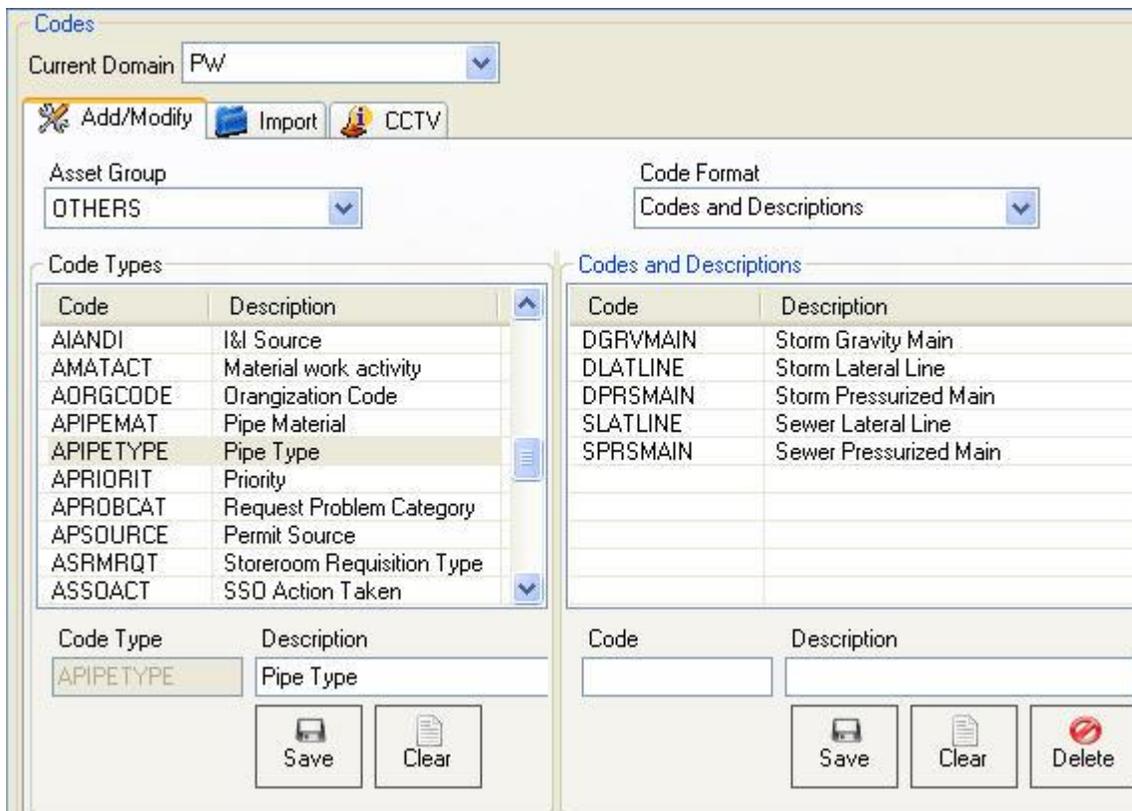
Field Name	Field Type	Vi..	R...	Code Type	Code/Desc	Min Val
FAILURE CODE	VARCHAR	Y	N	AWOFAIL	DESC	

Define possible responses by clicking in the **Code Type** field to open the **Codes** box for selecting the applicable code and select the radio button option for how to display the information on the work order.



Populate the **Code** and **Description** in **Others > Codes**. Select the **Asset Group** from the dropdown, enter a new **Code Type** beginning with the letter already found in the field, enter the **Description**, and click the **Save** button. Populate the **Code Type** on the right pane by typing each **Code** and **Description** in the two boxes at the bottom of the pane and clicking the **Save** button.

**NOTE:** *Code Types* begin with a letter corresponding to the **Asset Group** selected. For codes that apply to more than one asset group, select **Others** as the **Asset Type**. **Others** custom codes begin with the letter **A**.



6. Check the box for **Is visible?** to display the field on the request, work order, or inspection.

**TIP:** Uncheck the **Is visible?** checkbox to track a field with a default value to prevent users from changing it, for example, tracking an internal accounting code fund structure on each work order activity type to reconcile work order costs back to a financial system.

7. Check the box **Is required?** for fields where a response is needed by the organization.

**NOTE:** Values for all required fields must be entered before a work order can be closed.

8. Check the box for **Always sort by code?** to always sort the list displayed on the request, work order, or inspection by the code.

9. If desired, enter a **Default Value** for the custom field.

**NOTE:** Default values can be used to track any information the organization needs, such as internal codes to link back to another application, permitting information, etc.

10. If desired, enter a **Link Field Name** to integrate work orders to applications with unusual field names.

**NOTE:** The **Link Field Name** field is not seen or used by the end user. Give the field a logical custom name and place the third-party system's name in the **Link Field Name**.

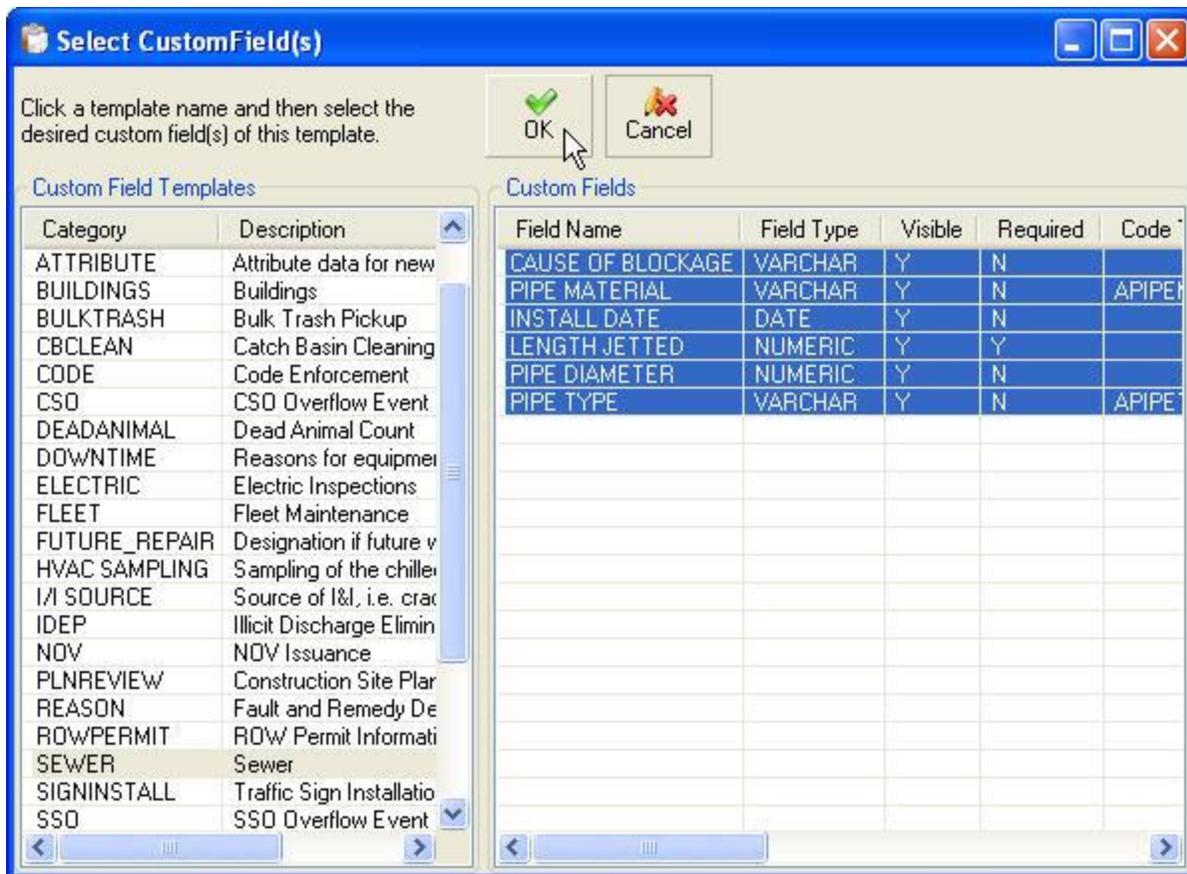
11. Click the **Save** button on the **Define Custom Fields** pane to save the custom field to the **Existing Custom Fields** list.

The **Existing Custom Fields** list contains these display columns to allow the administrator to see all the custom information for the category selected on the left frame.

- **Field Name**
  - **Field Type**—**Date**, **Numeric**, or **Varchar**.
  - **Visible**—**Y** or **N**; available to users.
  - **Required**—**Y** or **N**; required fields must be populated before a user can save.
  - **Code Type**—Applies only to **Varchar** and only if the administrator defines a custom code to specify values for a selection list.
  - **Code/Desc.**—If using a **Code**, this column shows whether the user will see the **Code** or **Description** list.
  - **Min. Value**—Use to set a minimum value for the **Numeric** field.
  - **Max. Value**—Use to limit the value so it must be lower than the value listed.
  - **Default**—Lists a **Default Value** if one was selected for the field.
  - **Link Field Name**—Lists the field from another application to link to Cityworks.
  - **Always Sort by Code**—**Y** or **N**; indicates if the list is sorted by the code.
12. Add all custom fields for the selected category by repeating steps 5-10. If needed, a field can be edited by double-clicking on it in the **Existing Custom Fields** list to load it back into the **Define Custom Fields** frame, making the desired edits, and clicking the **Save** button.
13. Add custom fields for all additional categories by repeating steps 1-11. If the same fields that were set up for one category are wanted in another category, click the **Select** button on the right pane to open the **Select Custom Field(s)** box.

Select the **Category** on the left and the field(s) on the right.

14. Click **OK** to add the selected fields to the new category.



## Deactivating a Custom Field Category

If a custom category is no longer needed, select it from the **Existing Categories** list and click on the **Inactive** radio button option on the lower left pane. **Inactive** prevents the fields from being displayed on any future work orders but retains the fields on all previous work orders where they appear, thus keeping the historical data intact.

Deleting a custom field category or field is allowed to facilitate the setup; however, it is designed for use only in the case where a selected custom category has never been used. A message opens to confirm the deletion as this will remove either the category or specific field and all the related customer field data. Click **Yes** to delete the custom category or field.

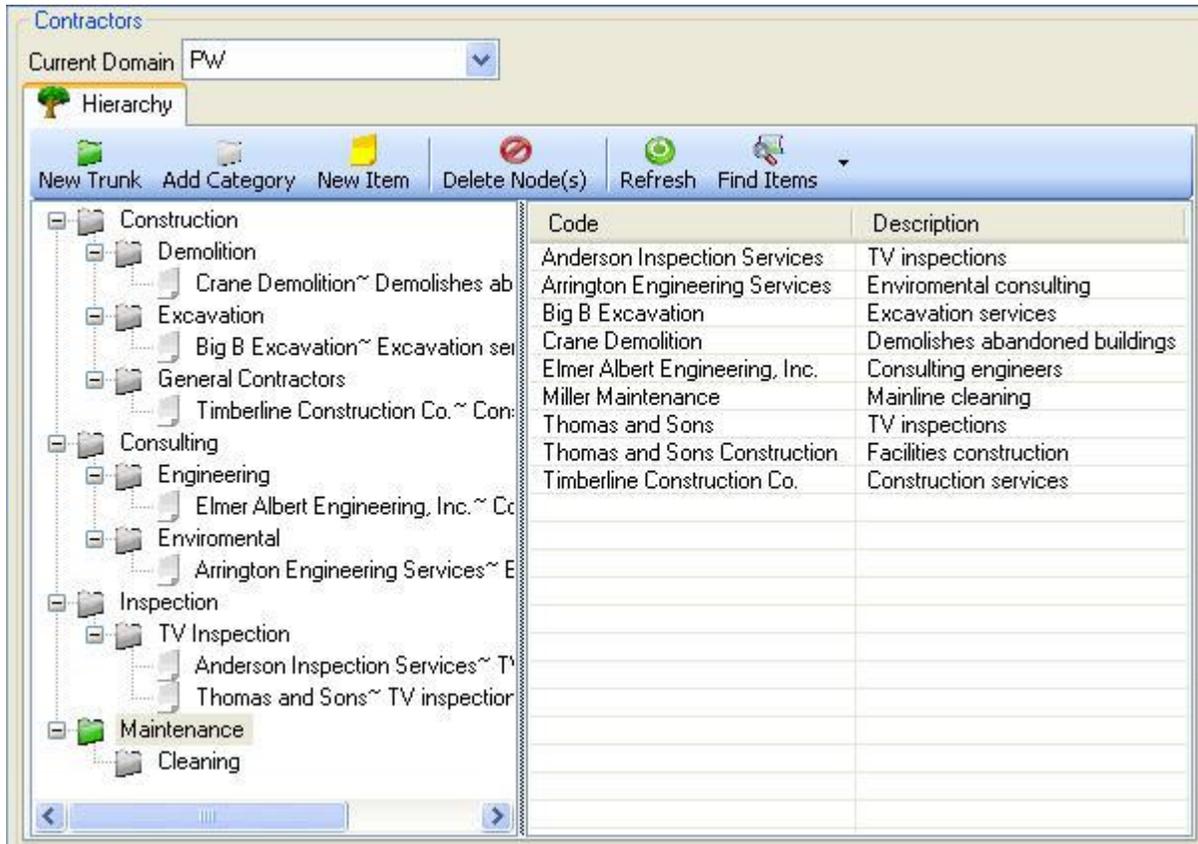
***IMPORTANT:*** *If the custom category or field has been used, Azteca Systems Inc. recommends deactivating the category to preserve the history.*

## Contractors

The **Contractors** function tracks contractor information with their contracted rates. This contractor information is available for adding contractor labor, material, and/or equipment costs on a work order.

The **Contractors** window is similar to **Request Templates** with the tree on the left and the list on the right. The same contractor may be placed in multiple domains as well as multiple locations within the hierarchy.

**NOTE:** Assemble the tree using the **New Trunk**, **Add Category**, and **New Item** buttons, as described in the section [Setting up Data Trees](#).



The **New Item** opens the **Contractor Edit** box for adding the details. Once the contractor is added, it may be opened for updating from the list on the right by double-clicking on the desired contractor or the leaf on the left. Contractor information may also be added using the Cityworks Data Template.

1. Set the value for each field in the **Information** pane. The window opens with these default values.

**TIP:** All field types and lengths are listed in the **ContractorLeaf** tables in [Appendix 2: Cityworks Data Template Fields](#).

Field	Value
Name	
Description	
Overtime Factor	1
Emergency/Holiday Factor	1
Address	
City	
State	
Zip	
Cell Phone	
Office Phone	
Other Phone	
Fax	
Email	
Contractor Number	
Contact Name	
Locally Based	Yes
Comments	
Federal Tax Id	
FMS No.	
PIN	

- **Name**—Type in the name of the contractor, up to 35 characters in length.

**NOTE:** The **Name** field cannot be changed once the contractor is saved, except by deleting the contractor and then adding it back in again.

- **Description**—Type in the full name of the contractor if it did not fit in the **Name** field, a description of the service(s) this contractor provides, or any other descriptive information desired. A maximum of 50 characters is allowed.
- **Overtime Factor**—Type in the number by which to multiply the pay rate for any overtime incurred. This is set to **1** by default, meaning that the regular rate applies to overtime work.
- **Emergency/Holiday Factor**—Type in the multiplier for any emergency work or holiday pay. The default value is **1**.

**TIP:** If nothing is entered in the **Overtime Factor** or **Holiday/Emergency Factor** fields, no additional labor is added to the usual rate. If these rates are used in addition to the regular labor rates, enter numbers less than 1. If only the overtime or holiday/emergency rate is applied, enter numbers greater than 1.

Type in the following contractor information:

- **Address**—Type in the contractor’s street or mailing address.
- **City**
- **State**
- **Zip** code
- **Cell Phone**
- **Office Phone**
- **Other Phone**
- **Fax**

**TIP:** All phone and fax numbers allow for 50 variable text characters so multiple numbers can be stored in a single field.

- **Email**—Allows a maximum length of 250 characters for entering multiple email addresses. Use a semicolon to separate each address.
- **Contractor Number**—Type in the reference number used to track the contractor.

**NOTE:** Contractor **Number** may be a contract number, a contractor number, or any alpha-numeric ID up to 15 characters in length.

- **Contact Name**
- **Locally Based**—Toggles between **Yes** and **No** to indicate whether the contractor is locally based or not. **Yes** is the default value.
- **Comments**—Record any additional information about the contractor, up to 256 characters.
- **Federal Tax Id**—Enter the contractor’s federal business ID number.
- **FMS No.** —Enter the Financial Management System (FMS) number.
- **PIN**—Enter the Personal Identification Number (PIN) for the FMS number.
- **Registration Date**—Enter the date the contractor received their FMS number.
- **Minority / Women Owned Business Enterprise**—Toggles between **No** and **Yes** to indicate if the contractor qualifies as a minority and women business enterprise (MWBE). **No** is the default value.

Enter the contractor’s insurance information. The amount fields are numeric, allowing allow up to 12 digits with 2 decimal places, and have a default value of **0**. For older vehicles, a contractor may elect to carry only general liability coverage.

Field	Value
Registration Date	
Minority / Women Owned Business Enterprise	No
Liability Insurance Amount	0
Liability Insurance Certificate	
Liability Insurance Effective Date	
Liability Insurance Expiration Date	
Workers' Comp Amount	0
Workers' Comp Certificate	
Workers' Comp Effective Date	
Workers' Comp Expiration Date	
Automobile Insurance Amount	0
Automobile Insurance Certificate	
Automobile Insurance Effective Date	
Automobile Insurance Expiration Date	
General Liability Amount	0
General Liability Certificate	
General Liability Effective Date	
General Liability Expiration Date	
Visible in Server	Yes

- **Liability Insurance Amount**
- **Liability Insurance Certificate**—Enter the certificate number for liability coverage.
- **Liability Insurance Effective Date**
- **Liability Insurance Expiration Date**

- **Worker's Comp Amount**—Enter the amount of worker's compensation insurance the contractor carries to cover their workers.
  - **Worker's Comp Certificate**
  - **Worker's Comp Effective Date**
  - **Worker's Comp Expiration Date**
  - **Automobile Insurance Amount**
  - **Automobile Insurance Certificate**
  - **Automobile Insurance Effective Date**
  - **Automobile Insurance Expiration Date**
  - **General Liability Amount**
  - **General Liability Certificate**
  - **General Liability Effective Date**
  - **General Liability Expiration Date**
  - **Visible in Server**—The default is set to **Yes** to allow the contractor information to display in Cityworks Server AMS. Click to toggle to **No** so it doesn't display in Server.
2. In the **Overhead** box, type in the **Rate** and select the radio button option for how the overhead is calculated into the contractor cost (**Percentage** or **Hourly**). Leave blank if overhead is not applicable to this contractor.
  3. In the **Rate Type** box, type in the **Amount** and select the radio button option for how this contractor is paid:
    - **Hourly**—Cityworks uses this rate to calculate labor on the work order by multiplying it by the number of hours.
    - **Fixed**—Cityworks places this fixed value in the labor cost field when this contractor is selected.

***TIP: Fixed** is the most flexible rate because it allows the user to modify the labor cost. Hours may still be tracked, but do not affect the fixed amount.*

- **Per Unit**—Cityworks multiplies this amount by the total number of units to calculate the labor cost.
4. In the **Provides** box, check the box(es) for all resources this contractor may provide (**Labor**, **Material**, and/or **Equipment**).

***NOTE: Provides** is for information only. Contractor labor, materials, and/or equipment may be added to Cityworks work orders for all available contractors regardless of which boxes are selected here.*

5. Optional for licensed contractors: Check the **Licensed** box to activate the other **License Information**.
  - **Expiration Date**—Type in the field or use the dropdown arrow to open a calendar. By default the current date loads in the field.
  - **Type of Work**—Enter a description of up to 250 characters.
6. Click the **Save** button to save the contractor.

**Contractor Edit - Thomas and Sons**

Field	Value
Name	Thomas and Sons
Description	TV inspections
Overtime Factor	1.50
Emergency/Holiday Factor	1.75
Address	9390 South 119 East
City	Thomasville
State	UT
Zip	84070
Cell Phone	(801) 808-8888
Office Phone	(801) 523-2626
Other Phone	
Fax	(801) 523-2628
Email	thomas@tinspect.com
Contractor Number	206408
Contact Name	Steve
Locally Based	No
Comments	Small, family-owned company
Federal Tax Id	
FMS No.	
PIN	

**Overhead**  
Rate: 33.00  
 Percentage  
 Hourly  
Rate Type  
Amount: 22.50  
 Hourly  
 Fixed  
 Per Unit

**License Information**  
 Licensed  
Expiration Date: 12/31/2010  
Type of Work: TV inspections

**Provides**  
 Labor  
 Material  
 Equipment

**Keywords**  
  
 Add  Delete  
Value  
INSPECT  
INSPECTION  
THOMAS  
TV

**Custom Fields**

Field Name	Value
WEBSITE	www.thomas&sons.com
CONTRACTOR TYPE	Contract

Save Cancel Delete Close

7. Type a keyword in the **Keywords** box and click the **Add** button to list them. Do this for each keyword.

The contractor must be saved in the database to generate the SID which provides the link for the keywords before they can be added or an error message opens to remind the administrator to first save the contractor.

**NOTE:** *Keywords are automatically saved in the database when the **Add** button is clicked.*

8. Optional: Add custom fields for collecting more contractor information. Go to **Others > Custom Data Fields** and select **ContractorLeaf** from the **Tables** dropdown. Type in the **Field Name**, select the **Field Type** and any associated fields that open up for the selected type, check the box for **Field Visible** and/or **Field Required**, and click the **Save** button to add it to the list and place it in the **Contractor Edit** window.

**NOTE:** See [Custom Data Fields](#) for more information.

Custom Data Fields

Tables

Tables: CONTRACTORLEAF | Field Name: CONTRACTOR TYPE | Field Type: VARCHAR | Code Type: ACONTRTYP

Code Type options:  Use Code,  Use Description

Default Value: [Empty text box]

Field Visible:  | Field Required:  | Save | Delete

Field Name	Field Type	Visible	Required	Code Type	Code/Desc
WEBSITE	VARCHAR	Y	N		CODE

- If any **Custom Fields** are listed, double-click in the **Value** column in the box to open a **Codes** box or **Enter Value** box. Follow the prompt to enter the value, and click **OK**.

**NOTE:** The type of **Enter Value** box depends on the selected **Field Type** and the parameters set in step 8.

Codes

ACONTRTYP Codes

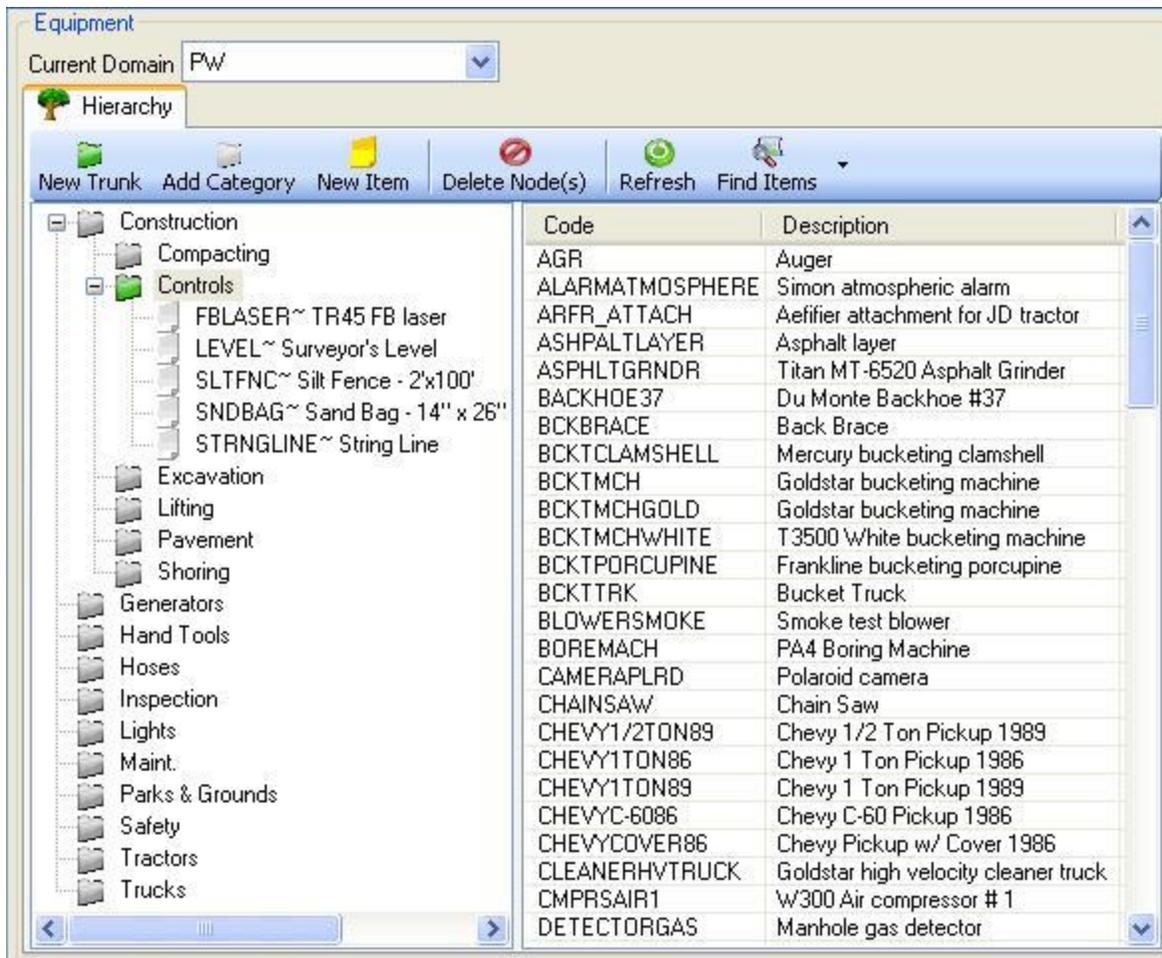
Code	Description
CONTRACT	Contract
LIMITEDUSE	Limited Use
PRIVATE	Privately-owned Company
STATELIC	State Licensed

- Click the **Save** button to save the custom field values.

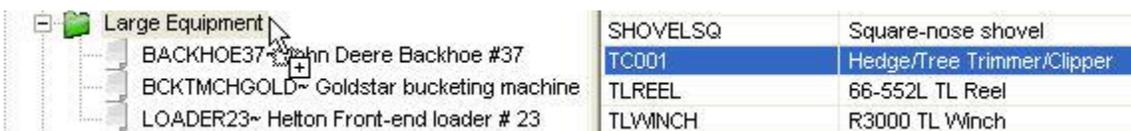
## Equipment

Use the **Equipment** function to list all the equipment owned and used by the organization. Include all equipment that may be charged to work orders. The Cityworks Equipment Manager add-on also accesses this information for equipment check in/out and reserving.

**NOTE:** Additional equipment items may be added to Cityworks Equipment Manager for tracking purposes even if they are not charged to work orders.



The **Equipment** window has a tree on the left and equipment list on the right. Build the tree using the toolbar buttons as described under the section [Setting up Data Trees](#). Equipment lists may be imported using the Cityworks Data Template and then placed into the tree structure. Equipment may be selected from the list and dropped into a folder in the hierarchy.



Once the equipment list is in the database, additional items may be added by clicking the **New Item** button. Equipment information may be edited by double-clicking on the equipment in the hierarchy or **ID** list.

1. Type in the **ID**, up to 20 characters.

**NOTE:** Once the **ID** has been defined and saved, it cannot be edited.

**Equipment Edit - BACKHOE37**

ID: BACKHOE37    Model: Z35    Manufacturer: Du Monte Manufacture

Description: Du Monte Backhoe #37    Warranty Date: 10/14/1996

Image: C:\Documents and Settings\All Users\Documents\CW\Images\Equipment\JD710GBack

Unit Cost: 37.55     Hourly     Fixed     For equipment check in/out only     Viewable in Server

**Keywords:** Add, Delete

**Custom Fields:**

Field Name	Value
SIZE	
STORAGE AREA	Main Equipment ...

**Attachments:** Add, Delete

Save    Clear    Delete    Close

2. Type in the **Model**, 15 characters maximum, and **Manufacturer**, 20 characters maximum.
3. Type in the **Description**, up to 56 characters.
4. Optional: Type in the **Warranty Date**.

**NOTE:** Equipment **Warranty Date** is not used on the work order.

5. Optional: Click in the **Image** field to open a box for navigating to the image file path.

**NOTE:** Image files need to be stored on a network drive for the images to be accessible to all users.

6. Type in the **Unit Cost** and select the radio button option for **Hourly** or **Fixed** to determine how the equipment costs are calculated on the work order.

**NOTE:** **Hourly** is the default. **Fixed** always adds the same cost to the work order, but allows for editing that cost and can still track the actual hours used.

- Optional for users of Equipment Manager: Check the box **For equipment check in/out only** if this equipment is not to be added to the work order.

**NOTE:** Checking the **For equipment check in/out only** prevents the item from showing up on the work order equipment list, forcing it to be issued through Equipment Manager.

- Optional for Server users: Uncheck the box for **Viewable in Server** if the equipment is not to be listed in the current selection list in Server. This inactivates the item but still allows for searching on it and maintains its history.

**NOTE:** By default **Viewable in Server** is checked for all equipment items.

- Click the **Save** button to generate the unique equipment ID.
- Type a keyword in the **Keywords** box and click the **Add** button for each keyword.

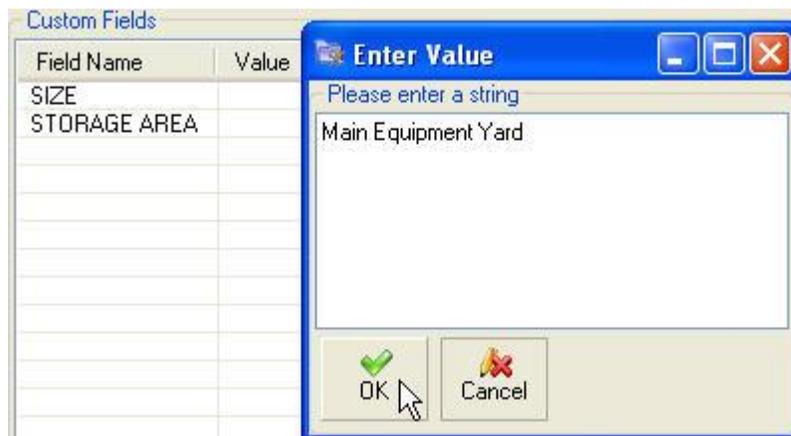
An error message opens to alert the administrator to save the equipment first, as the SID assigned when the equipment is saved provides the link to the keywords in the database.

- Add any desired custom fields under **Others > Custom Data Fields** and select **EquipmentLeaf** from the **Tables** dropdown. Type in the **Field Name**, select the **Field Type** and any associated fields that open up for the selected type, check the box for **Field Visible** and/or **Field Required**, and click the **Save** button to add it to the list and place it in the **Equipment Edit** window.

**NOTE:** See the section on [Custom Data Fields](#) for more information.

- If there are any **Custom Fields** listed, double-click in the **Value** column in the box to open an **Enter Value** box, follow the directions listed there to enter the value, and click **OK**.

**NOTE:** The type of **Enter Value** box depends on the selected **Field Type** and the parameters set in step 10.



- Optional: Add any desired **Attachments** by double-clicking in the field and navigating to the desired file.

- Click the **Save** button to save the custom fields.

**NOTE:** Keywords and attachments are automatically saved in the database when you click **Add**.

## Materials

The **Materials** window lists materials used on work orders. Many fields defined on the **Material Edit** window are displayed with the material in columns on the work order **Material** pane. Some fields are for organizations using the Cityworks Storeroom add-on software and some for users of Miner & Miner's Designer interface.

Material ID	Description	Unit of Measure	Unit Cost	Stock on Hand
FHKENDY4.5	Kennedy 4.5 inch Fire Hydrant	EA	5682.17	15.00
FHMUEL4.25	Mueller 4.25 inch Fire Hydrant		3947.17	15.00

Account	Units	Manufacturer	Supplier	Model	Part Number
		Kennedy	Azteca	K81A	22740
		Mueller	SSCO	Centurion	22604

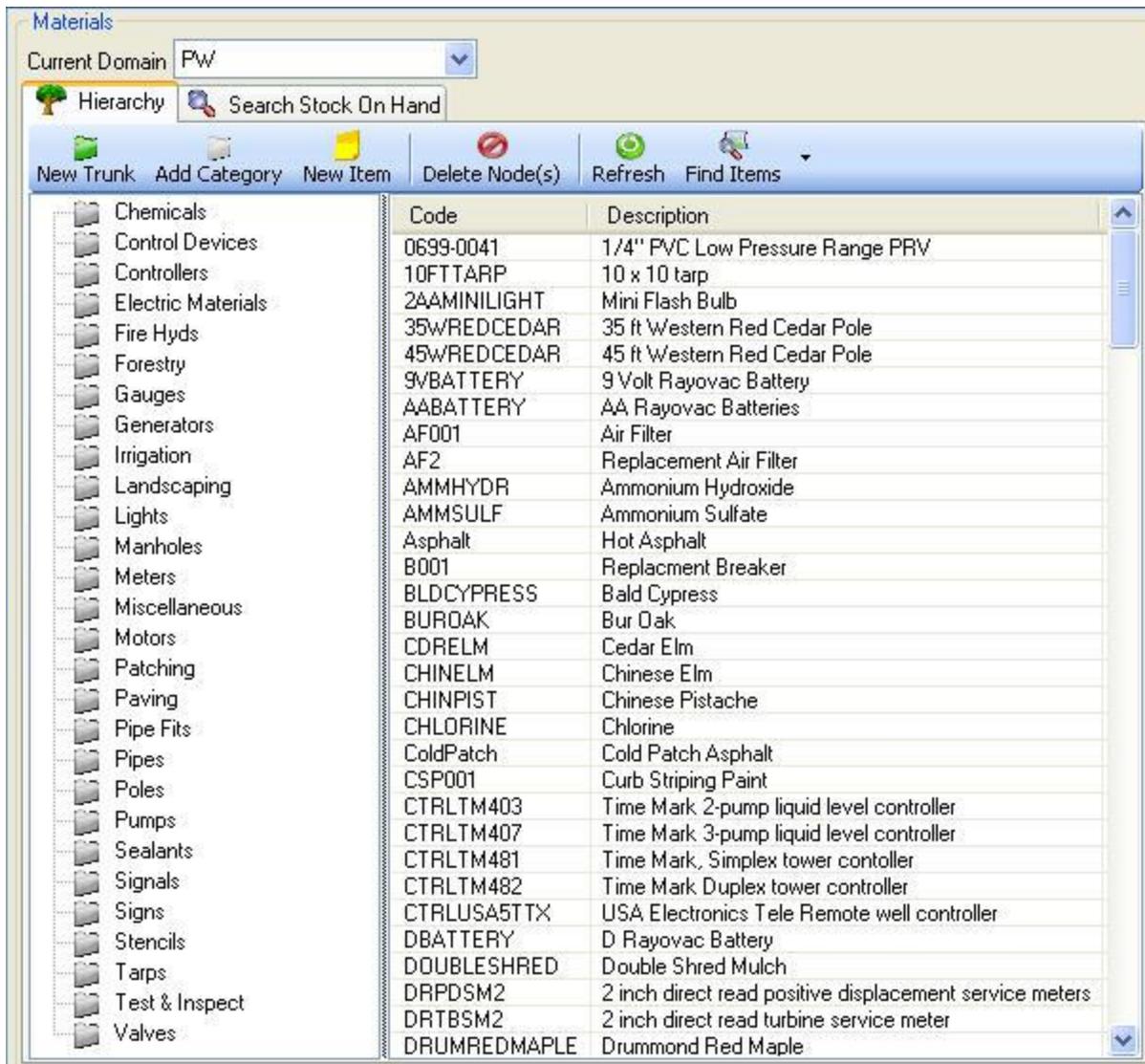
The **Materials** window consists of two tabs and accesses a **Material Edit** window for material details with an additional five tabs.

### Materials Hierarchy Tab

The **Materials** window contains a **Hierarchy** tab for organizing materials into a tree on the left and an alphabetical list on the right, like contractors and equipment.

**NOTE:** See [Importing Data](#) and [Setting up Data Trees](#) for directions on setting up materials. Materials may also be set up in Cityworks Storeroom.

Once the **Materials** tree and list is complete, a **Material Edit** form may be opened by double-clicking on the material in either the tree or from the list. A new material may be added by clicking the **New Item** button which opens the **Material Edit** form for entering the data.



## Materials General Tab

The **General** tab contains material information such as model, manufacturer, cost, supplier, part number, storeroom stock, keywords, custom fields, and attachments. While every field may not be applicable to every material, populate as many fields as possible. Much of the information is displayed on the work orders and some fields may be used for searches. Azteca Systems Inc. recommends populating the **ID** (required), **Description**, **Unit of Measure**, **Unit Cost**, **Min. Quantity**, and **Cost Type**.

If Cityworks Storeroom is installed, some fields may have locks placed on them to allow that material information to be maintained and edited in Storeroom only. Check the **Preferences** setting for **Allow Materials Edit in Designer** to enable or disable this capability.

**Material Edit - FHKENDY4.5**

General Assembly Parts Labor Equipment Reserved

ID: FHKENDY4.5 Description: Kennedy 4.5 inch Fire Hydrant Model: K81A Manufacturer: Kennedy

Detail: Unit of Measure: EA Audit Interval: Q Unit Cost: 5682.17 Min Quantity: 2

Supplier: SSC0 Part Number: 22740 Cost Type:  Weighted Average  Current  FIFO  LIFO

CU Category: WATER GDB Table Name: GDB Subtype:  Viewable in Server

Image: C:\Documents and Settings\All Users\Documents\CW\Images\Water\hydrant.gif

Keywords: 4.5, FIRE, HYD, HYDRANT, KEN, WATER

Storeroom:

Storeroom	Stock on Hand	Total Stock:
	1	31

Location: Add Remove

Custom Fields:

Field Name	Value	IsRequired
HAZARDOUS	N	Y
WARRANTY INFORMATION		N
TRAINING		N
SHELF LIFE	NA	N
DISCOUNTS		N
DISCOUNTED VOLUME	12	N

Attachments: Attachment

Save Clear Cancel Delete Close

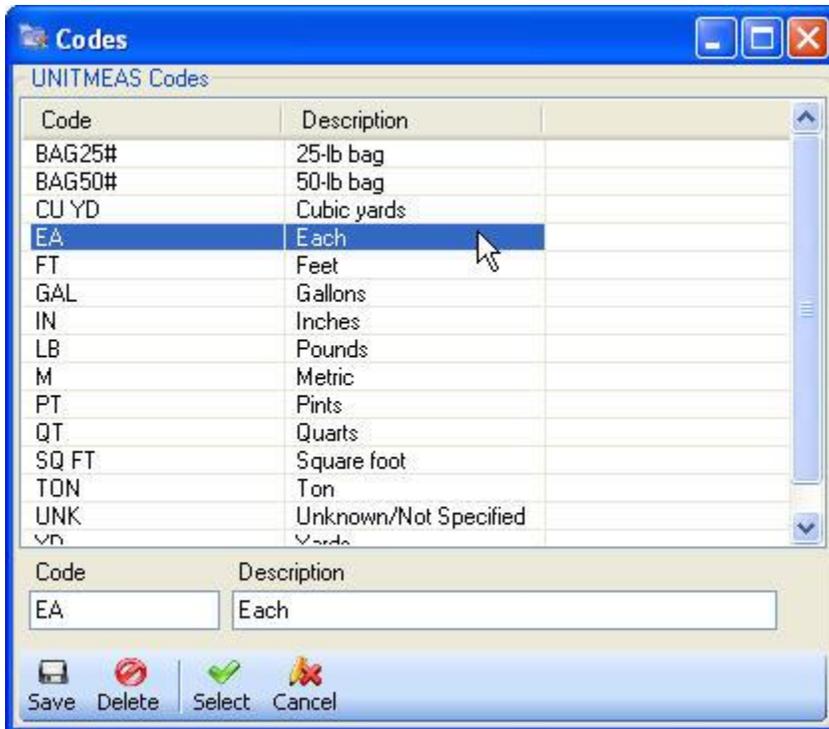
1. Enter the following fields:

- **ID**—Key identifier of 20 characters or less
- **Description**—A 40-character field listed with the **ID** as a separate column on the right pane or separated by a tilde in the tree on the left
- **Model**—Manufacturer’s material ID, up to 15 characters
- **Manufacturer**—20 characters or less
- **Detail**—150 additional characters allowing a more detailed description of the material

**NOTE:** The **Detail** field is not displayed on the work order.

2. Select the **Unit of Measure** from the popup box of **UNITMEAS Codes**. Double-click on the desired code or select it and then click the **Select** button).

**NOTE:** You can add codes by typing in the **Code** and **Description** at the bottom of the box and clicking **Save**. **UNITMEAS** codes can also be populated in **Others > Codes** under the **Asset Group: Others**.



**NOTE:** Since unit measure codes are user-defined, they may vary from those shown above.

3. Select the recommended **Audit Interval** for the frequency of performing audits on this material from the popup **AUDITINT Codes** box.

**NOTE:** **AUDITINT Codes** are set up in **Others > Codes** and are user-defined so may vary from those shown.



4. Type in the **Unit Cost**.
5. Type the desired minimum quantity desired to keep on hand in the **Min Quantity** field.

**NOTE:** **Min Quantity** is used to search for all materials with less than the desired minimum quantities. This is the quantity considered to be the re-order point.

6. Type in the **Supplier**, up to 20 characters. Storeroom users: Select the **Supplier** from the dropdown list which is populated in the Storeroom add-on.
7. Type in the **Part Number**, up to 20 characters.

- For Storeroom users: Select the radio button option for **Cost Type** to use on work orders. **Current** is the default setting.

**NOTE: Weighted Average, FIFO, and LIFO cost types are for the Cityworks Storeroom add-on product. Cityworks administrators may set up storeroom information in Designer or in Storeroom. Storeroom is the only Cityworks application that contains code to work with these other three cost types.**

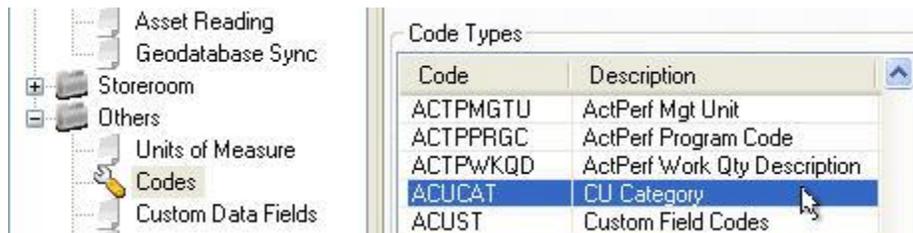
- Weighted Average**—Totals all the costs for the selected material divided by the number of units on hand.
- Current**—Uses the current price of the material when it was most recently received.

**NOTE: If the Cityworks Storeroom add-on is not used, the **Current** value must be manually entered for each shipment.**

- FIFO**—“First in, first out” inventory method which uses the older unit costs first when distributing parts until the older inventory is gone and then the newer unit costs are used for the newer inventory.
- LIFO**—“Last in, first out” inventory method which uses the most recent costs first when distributing parts until the newer inventory is gone and then uses the older unit costs for the older inventory.

- Miner & Miner Designer Users: Select the **CU (Compatible Units) Category** from the dropdown.

Populate the CU Category in **Others > Codes > ACUCAT**.



Type the geodatabase information in the **GDB Table Name** and **GDB Subtype** fields for materials that are represented by feature classes in the geodatabase.

**NOTE: GDB Subtype is the subgrouping of the geodatabase object.**

- Optional for Server users: Uncheck the **Viewable in Server** checkbox to remove the material from the current selection lists in Server but still allow the material to be included in searches and the history to remain intact.
- Optional: Click in the **Image** field to navigate to an image file and load the image in the top right corner.

**TIP: Store image files in a network location accessible to all users.**

- Add any desired **Custom Fields** for materials under **Others > Custom Data Fields**, selecting **MaterialLeaf** from the **Tables** dropdown, typing in the **Field Name**, selecting the **Field Type** and any associated information, entering a **Default Value**, checking the applicable boxes for **Field Visible** and/or **Field Required**, and clicking the **Save** button for each custom field.

Custom Data Fields

Tables

Tables	Field Name	Field Type	Min Value	Max Value
MATERIALLEAF	DISCOUNTED VOLUME	NUMERIC	1	1000

Default Value

Field Visible  
 Field Required

Field Name	Field Type	Visible	Required	Code Type	Code/Desc	Min Value	Max Value	De
HAZARDOUS	VARCHAR	Y	Y	AYNNA	CODE			
WARRANTY INFORMATION	VARCHAR	Y	N		CODE			
TRAINING	VARCHAR	Y	N	ATRAIN	DESC			
SHELF LIFE	VARCHAR	Y	N		CODE			
DISCOUNTS	VARCHAR	Y	N	ADISCOUNT	CODE			

- Populate the **Custom Fields** by clicking in the **Value** column to open a selection box, **Choose a Date**, or **Enter Value** box and select the value or follow the prompt to enter a valid value, and click the **Select** or **OK** button to load the value.

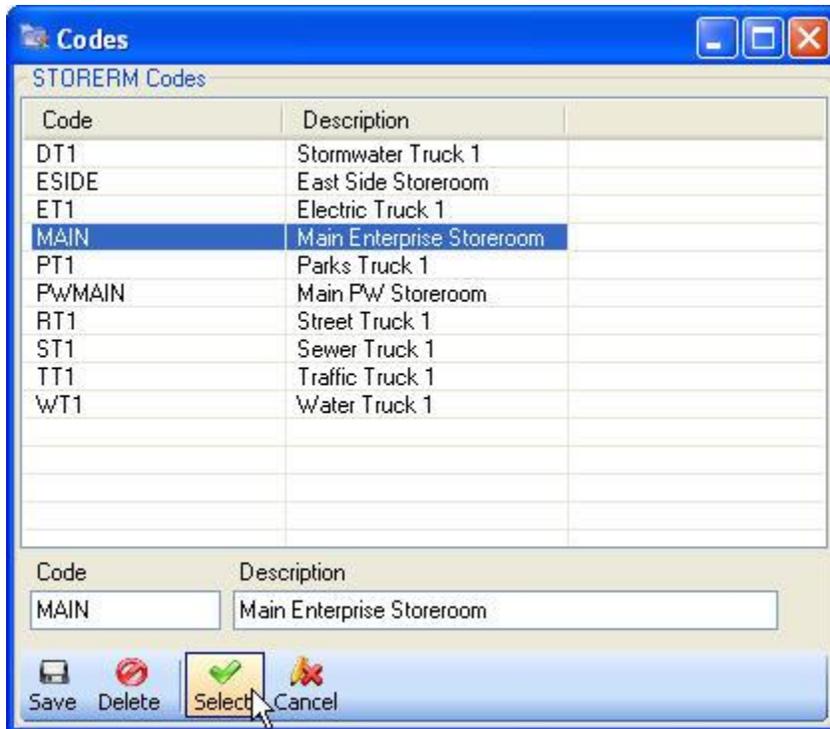
Required fields must be populated or a message opens when saving to tell the user to enter a value in the required custom field listed.

- Click the **Save** button to save the material and material information to the database and generate a material SID.
- Type a keyword into the **Keywords** field and click the **Add** button. Do this for each possible keyword.

**NOTE: Keywords, Storeroom information, and Attachments are saved using the Add button located in their respective boxes. Keywords and Storeroom information are saved to the database one entry at a time.**

- Select the **Storeroom** from the **STORERM Codes** popup box adding the storerooms needed, type in the **Stock on Hand** for the selected storeroom and **Location** within the storeroom where the material is stored, and click the **Add** button.

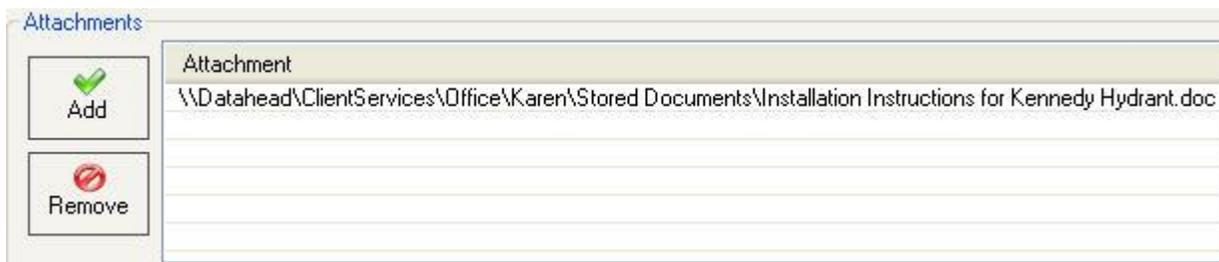
**NOTE: Storeroom add-on users must populate these Storeroom fields. If no information is added to the Storeroom box, the Total Stock remains 0.**



If no information is added to the **Storeroom** box before the **Material Edit** box is closed, the software loads **N/A** in the **Storeroom** and **Location** fields with zero **Stock on Hand**.

17. Add any applicable **Attachments** by clicking the **Add** button to open a browser box, locate the file in a network location, and click **Open** to load the path into the list. Do this for each desired file.

**TIP:** Multiple **Attachments** may be added at the same time if they are located in the same folder.



18. If the defined material requires assembly, follow the steps under [Assembly Parts Tab](#), Labor Tab, and Equipment Tab to add the additional information to the material.

19. To add a new material, click the **Clear** button to clear the fields and follow steps 1-17.

20. Close out of the **Edit Material** box when finished adding materials using the **Close** button at the bottom of the form or the red **X** in the top right corner.

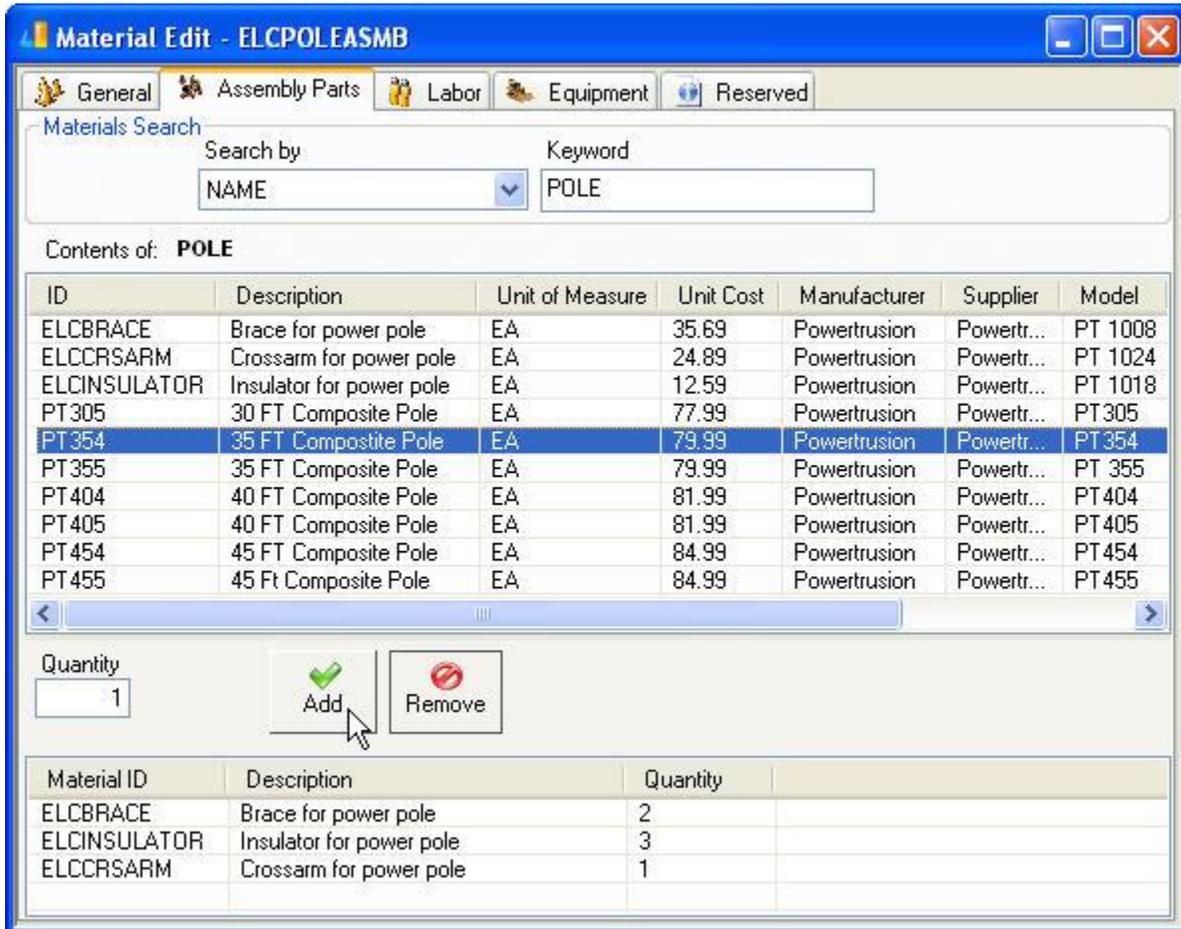
To delete a material, click the **Delete** button and click **Yes** when the confirmation box opens asking if the user wants to delete the material.

**IMPORTANT:** Storeroom stock must be zero before a material can be deleted. A **Delete Error** message opens to alert the user that material cannot be deleted where stock exists.

## Assembly Parts Tab

A material can be assembled from multiple materials and can include labor and equipment needed for the assembly. This may be used with or without the Miner & Miner Designer application. Define all the components as materials and then add another material for the assembly and add the parts on the **Assembly Parts** tab.

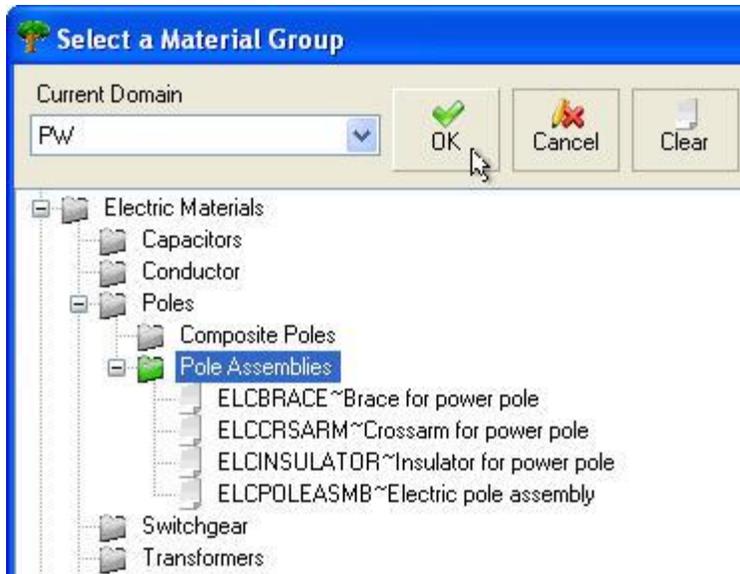
1. Switch to the **Assembly Parts** tab.



2. Load the material(s) in the center right pane by one of the following methods.

**NOTE:** Multiple materials may be listed at the same time using any of the three options.

- **Keyword**—Type a keyword in the **Keyword** field and press **Enter** to list the associated material parts.
- **Hierarchy**—Select **Hierarchy** from the dropdown (or type **h** into the field) to open the **Select a Material Group** popup box and navigate to the desired folder or leaf to load the material(s) into the list. If a folder is selected, all the materials in the folder are listed.



- **Name**—Select **Name** from the dropdown (or type **n** into the field) to list the materials.
3. Select the material wanted from the list and enter the **Quantity** needed to assemble one unit. The **Quantity** entered must be a positive, whole number or an error message opens stating that the quantity cannot be a decimal value because fractional parts cannot be added.

***TIP:** If necessary, divide the **Unit of Measure** into smaller increments so whole numbers may be used in the **Quantity** field.*

4. Click the **Add** button to add the material to the list at the bottom.
5. Repeat for each material needed.

The combined material cost for the items and quantities shown on the **Assembly Parts** tab is loaded on the **General** tab in the **Unit Cost** field which cannot be edited from the **General** tab.

### Labor Tab

The **Labor** and **Equipment** tabs allow a material to be configured as a compatible unit. If estimated cost units are added to a material, they are copied to the work order estimated labor and equipment costs when this material is added to the estimated material costs. This information can be selected for actual costs by using the **Predefined** dropdown option on the work order.

Add the labor needed to assemble the parts on the **Labor** tab.

1. Switch to the **Labor** tab.

**Material Edit - ELCPOLEASMB**

General Assembly Parts Labor Equipment Reserved

Labor Search

Employee    Search by    Group Name    Keyword  
 Contractor    GROUP NAME    ELECTRIC CREW 1

Members of: **ELECTRIC**

Name	Title
BOOKER, JEFFREY T	Electric Supervisor
BURTON, RICHARD	Electric Maintenance Worker 2
PERRY, ROCKY	Electric Maintenance Worker 3
PW, PW	Public Works Domain Administrator

Activity: INSTL    Work Description:    No. Hours: 0   

Name	Type	Group	Contractor #	Rate Type	Activity	Hours/Units	Description
BOOKER, JEFFREY T	Employee	ELECTRIC		Hourly	INSTL	1.5	Pole assembly
BURTON, RICHARD	Employee	ELECTRIC		Hourly	INSTL	1.5	Pole assembly
PERRY, ROCKY	Employee	ELECTRIC		Hourly	INSTL	1.5	Pole assembly

2. If necessary, change the radio button option from the default **Employee** setting to **Contractor**.
3. Load the employees or contractors into the center pane by one of the following methods.
  - **Keyword**—Type a keyword into the field and press the **Enter** key.
  - **Group Name**—Select from the dropdown list for **Group Name** to load the employees in the group.
  - **Employee Name**—Select from the **Search by** dropdown list to populate the list.
  - **Contractor Name**—Select from the **Search by** dropdown list to populate the list.
  - **Contractor Hierarchy**—Select from the **Search by** dropdown to open the **Select a Contractor Group** box, select a folder or contractor, and click **OK**.



4. Select the employee(s) from the list using <Shift + click> or <Ctrl + click> for multiple selections.
5. Select the **Activity** from the dropdown list. Populate this list in **Others > Codes > AMATACT**.

**NOTE:** *Activity* is utilized in the Miner & Miner Designer interface.

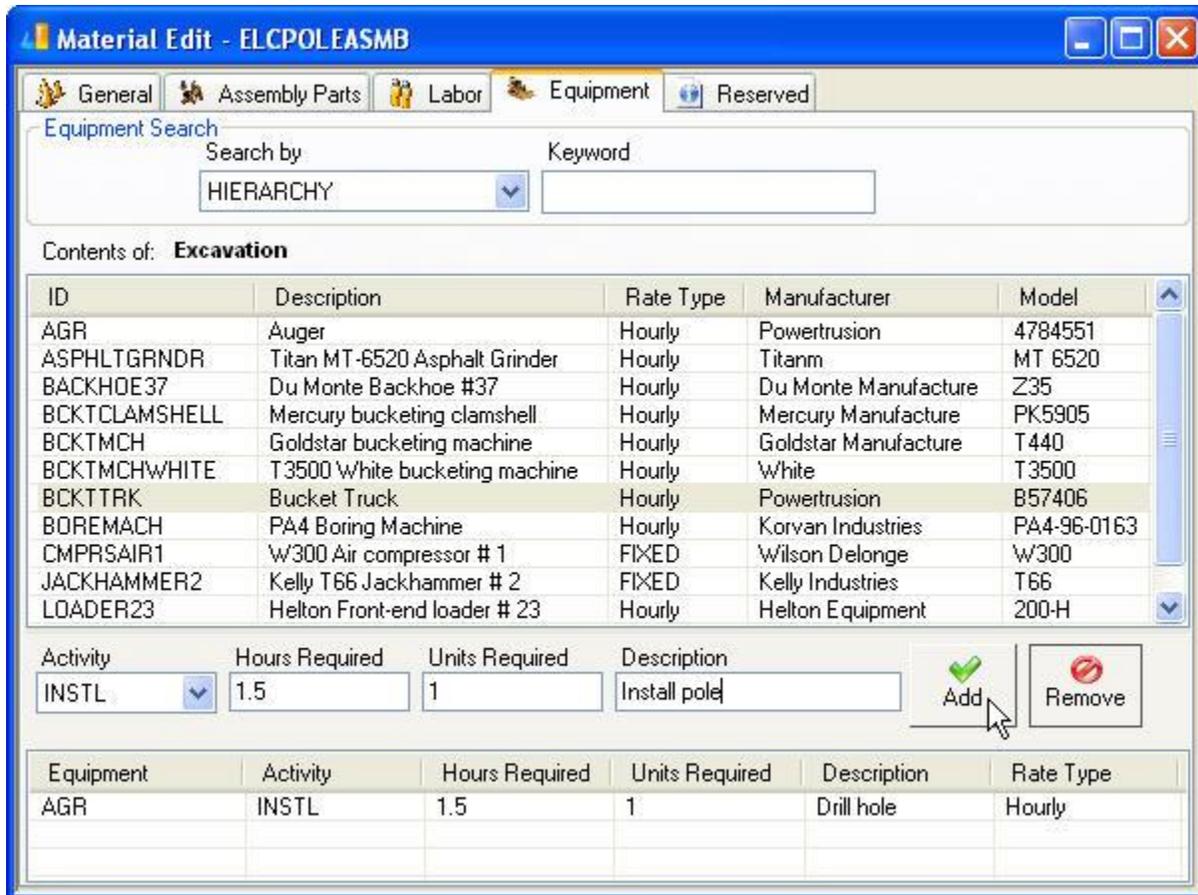
6. Enter the **Work Description** and the **No. Hours** required.
7. Click the **Add** button to list the employee(s) with the labor on the bottom of the pane.

To remove labor from the list, select the employee(s) or contractor(s) and click the **Remove** button.

### Equipment Tab

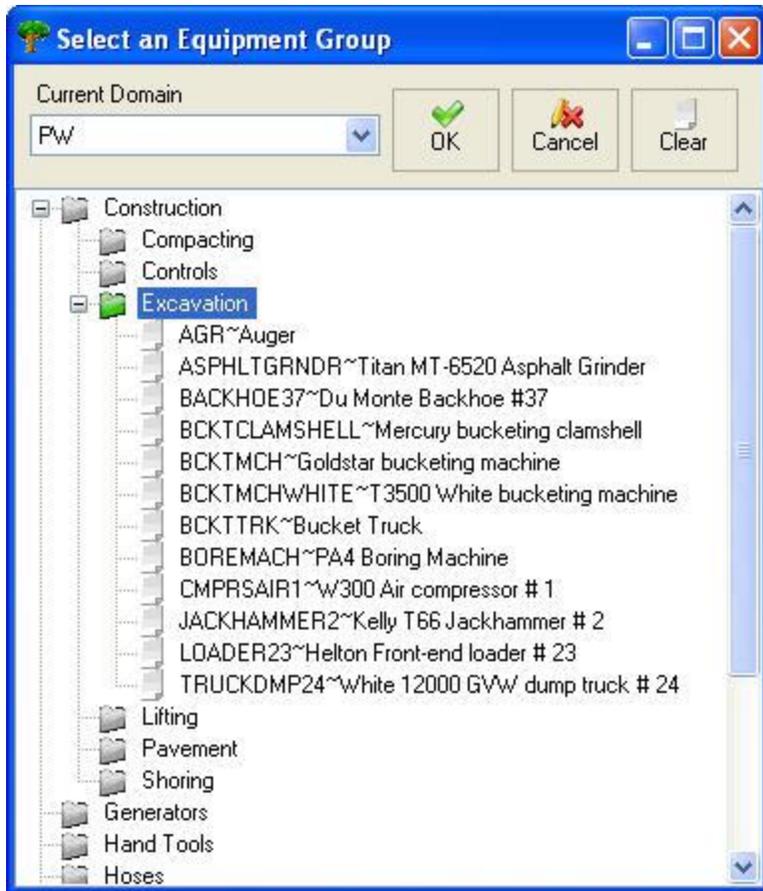
Add the equipment needed to install, remove, or repair the assembly on the Equipment tab. The information added here is added to the work order estimated equipment when the material is selected.

1. Switch to the **Equipment** tab.



2. Load the equipment on the center pane one of the following ways.

- **Keyword**—Type a keyword into the **Keyword** field and press the **Enter** key to load the equipment.
- **Name**—Select from the **Search By** dropdown to load all the equipment.
- **Hierarchy**—Select as the **Search By** field to open the **Select an Equipment Group** and select the equipment leaf or folder from the tree to load the equipment.



3. Select the equipment needed from the list on the center pane.
4. Select the **Activity** from the dropdown list.

**NOTE:** See step 4 of the preceding section for where to populate the **Activity** list.

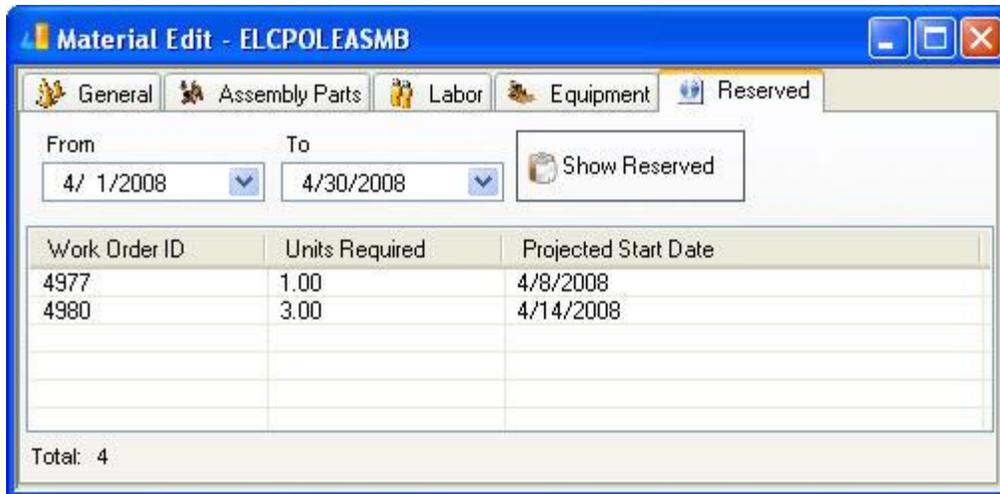
5. Type in the number of **Hours Required** for using the equipment.
6. Type in the **Units Required** if different than **1**.
7. Optional: Type in the **Description** of the equipment use.
8. Click the **Add** button to list the equipment information at the bottom of the pane.

Use the **Remove** button as needed to remove any incorrect information.

### Reserved Tab

The **Reserved** tab lists the work order IDs, units required, and projected start date for any open work orders within the specified date range which have the selected material added to the estimated material cost list.

1. Switch to the **Reserved** tab.



2. Select the **From** and **To** date ranges using the dropdown calendars or clicking on the month, day, and/or year and typing in the desired date.

**NOTE:** See the section on [Date Fields](#) for more information on setting the date.

**TIP:** Today's date is listed at the bottom of the calendar and can be selected by clicking anywhere along the bottom of the calendar.

3. Click the **Show Reserved** button to display information for the reserved material. The **Total** number is tallied and displayed in the bottom left corner.

## Search Stock on Hand Tab

The **Search Stock on Hand** tab allows an administrator to query for materials by ID, supplier, manufacturer, model, part number, storeroom, quantity, minimum quantity, cost, etc. Wildcard searches may be used for all fields except for **Cost Type**, **Stock on Hand**, and **Unit Cost**.

1. Close the **Material Edit** window and switch from the **Hierarchy** tab to the **Search Stock on Hand** tab.

Materials

Current Domain PW

Hierarchy Search Stock On Hand

Search Options

Material ID Description Manufacturer

Part Number Model Supplier

Storeroom Location

Stock on Hand Unit Cost

<= Total MinQuantity =

Cost Type

Weighted Avg.  
 Current  
 FIFO  
 LIFO

Display these Fields

BinLocation  
CostType  
Description  
Manufacturer  
MinQuantity  
Model  
PartNumber  
Storeroom  
StockOnHand  
Supplier  
UnitCost

Find Item(s) Clear Remove Item(s) Save to File Refresh

Search Results: 41 record(s).

UID	CostType	Description	Manufacturer	MinQuantity	Model	PartNumber
10FTTARP	A	10 x 10 tarp	Coleman	12		
2AAMINILIGHT	B	Mini Flash Bulb	Rayovac	24	2AA	53705
AABATTERY	B	AA Rayovac Batteries	Rayovac	48	AA 1.5V	43660
DBATTERY	B	D Rayovac Batteries	Rayovac	48	D 1.5V	43655
DYETABBLUE	B	Blue dye tablets	Formilabs	100		48556
EARPLUGSWOCORD	B	Ear Plugs without cord	West Safety Corp	100		41632
ELCBRACE	A	Brace for power pole	Powertrusion	10	PT 1008	
ELCCRSARM	A	Crossarm for power pole	Powertrusion	35	PT 1024	
ELCINSULATOR	A	Insulator for power pole	Powertrusion	80	PT 1018	
GLGRNPAINT	B	Gallon Rust-Oleum paint	Rust-Oleum	25	5300G	43994
GLOVES5MIL	B	5 Mil Disposable Gloves	Ansell Edmont	100		41788

2. Select the **Current Domain** from the dropdown.
3. Select the desired parameters for the search, using **%** before and after for a wildcard search if just part of the information is known or more results are wanted.
  - **Material ID**—Select from the dropdown to determine how much stock of a particular material is on hand or type in a wildcard search.

**TIP:** If a material is selected on the **Hierarchy** tab from the tree or the list, it automatically loads into the field when the **Search Stock on Hand** tab is opened.

- **Description**—Type in all or part of the description to list the matching materials.
- **Manufacturer**—Type in all or part of the manufacturer's name to list materials obtained from a particular manufacturer.
- **Part Number**—Type in all or part of a part number to list the materials.
- **Model**—Type in all or part of the model number to list the materials.

Materials

Current Domain:

Hierarchy

Search Options

Material ID:  Description:  Manufacturer:

Part Number:  Model:  Supplier:

Storeroom:  Location:

Stock on Hand:  Unit Cost:

Cost Type

Weighted Avg.  
 Current  
 FIFO  
 LIFO

Find Item(s) Clear Remove Item(s) Save to File Refresh

Search Results: 6 record(s).

UID	Description	Manufacturer	PartNumber
PRGUGENINS60	60 PSI General Instruments pressure gauge	General Instruments	11880
PRGUGENINS60	60 PSI General Instruments pressure gauge	General Instruments	11880
PRGLWEK30-70	Weksler 30/70 PSI water level gauge	Weksler	64181
PRGLWEK30-70	Weksler 30/70 PSI water level gauge	Weksler	64181
PRGLWEK60-140	Weksler 60/140 PSI Water level gauge	Weksler	64184
PRGLWEK60-140	Weksler 60/140 PSI Water level gauge	Weksler	64184

- **Supplier**—Select from the dropdown to list materials obtained from a particular source or type a wildcard in the field.
- **Storeroom**—Select from the dropdown to list which storeroom(s) to search or type a wildcard in the field.
- **Location**—Select a location within a storeroom to list all the materials found there.

**TIP:** Use **Location** to generate a list of materials for performing an audit.

- **Cost Type**—Check any or all of the boxes to search by cost type.

**NOTE:** See [Materials General Tab](#) for descriptions of the cost types.

- **Stock on Hand**—Select the quantifier (less than, less than or equal to, equal to, greater than, or greater than or equal to) from the dropdown symbols and type in a corresponding value or use the dropdown to select **MinQuantity** or **Total MinQuantity** as the search parameter.
- **Unit Cost**—Select the quantifier, less than, equal to, or greater than, from the dropdown selection and type in a corresponding value.

4. Select the display fields from the upper right pane, **Display these Fields in the Search Results**.

**NOTE:** The **UID** (user-defined ID) is always displayed as the first column.

5. Click the **Find Item(s)** button to list the **Search Results** at the bottom of the pane.

Stock on Hand < [ ] Unit Cost > [ 5000 ]  LIFO

Find Item(s) Clear Remove Item(s) Save to File Refresh

Search Results: 4 record(s).

UID	Description	Storerroom	StockOnHand	UnitCost
FHKENDY4.5	Kennedy 4.5 inch Fire Hydrant	ESIDE	10.00	5682.17
FHKENDY4.5	Kennedy 4.5 inch Fire Hydrant	MAIN	10.00	5682.17
Lamson		ESIDE	10.00	5763.35
Lamson		MAIN	10.00	5763.35

If doing a less than **Total MinQuantity** search, **StockOnHand** and **Storerroom** are not displayed but are replaced with a column for **TotalStock**.

The **Clear** button clears the search parameters and the results so a new search can be performed.

The **Material Edit** box may be opened for any of the materials in the **Search Results** list by double-clicking on the desired material.

The list may be saved to a file by clicking the **Save to File** button to open the **Save Search Results As** dialog box. Navigate to the desired location for saving the file, name the file, and click the **Save** button.

A **File Saved** message opens listing the path of the saved file once it has been created successfully.

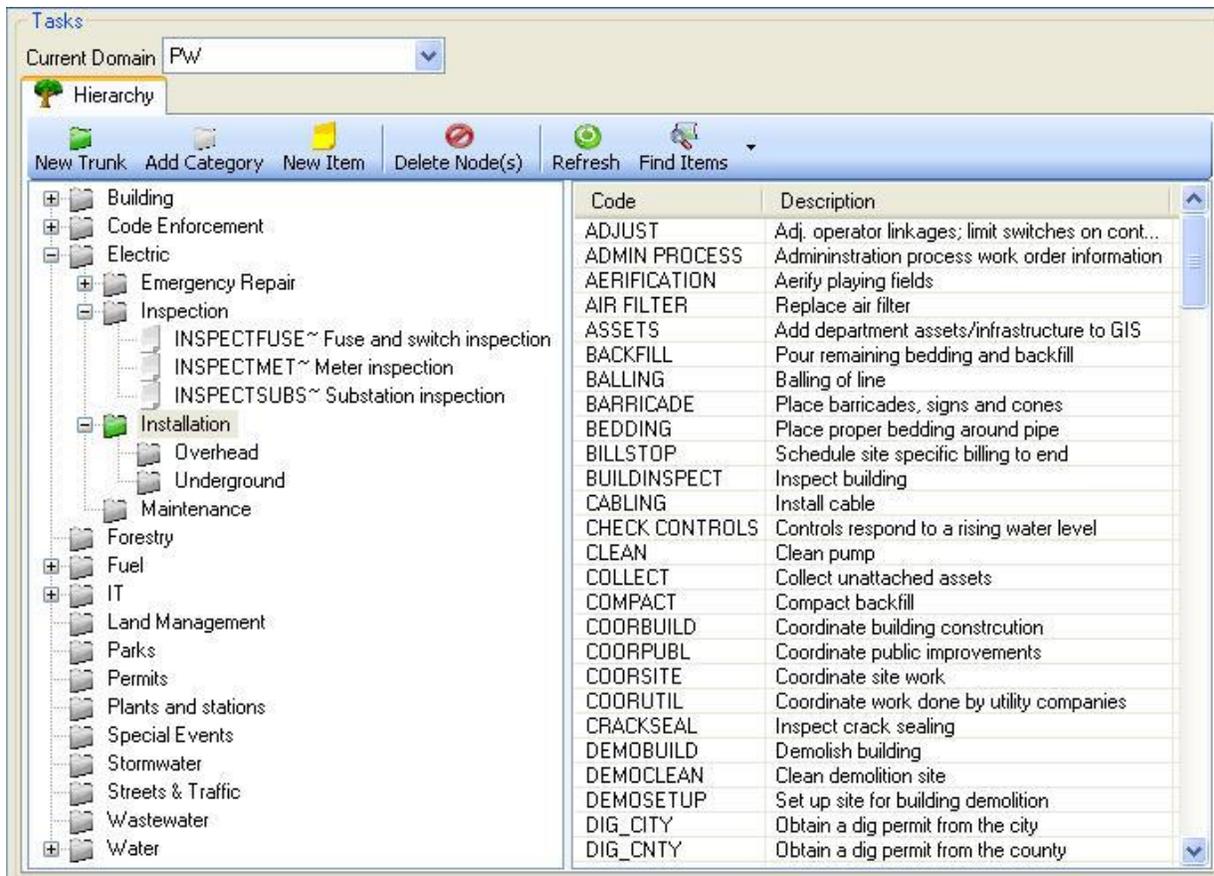
## Tasks

The **Tasks** window defines the tasks or steps needed to complete a work order. A task may be related to an asset with its own labor, materials, and/or equipment costs.

### Tasks Hierarchy Tab

Tasks are organized into a hierarchy on the left pane and listed on the right pane.

**NOTE:** See [Setting up Data Trees](#).



To open the **Task Edit** window, click on the **New Item** button. To edit a task once it has been defined, double-click on the task leaf in the hierarchy or on an item in the list.

## Task Edit Window

The **Task Edit** window provides information about the task, including description, assigned to employee or shop, time to complete, keywords, and a response to track accomplishments.

1. Type in the **Name**, 20 characters maximum. This is a required field.
2. Type in the **Description**, up to 100 characters.
3. If a particular employee is always assigned the task, select an **Assigned To** employee.

**NOTE:** The **Submit To** field on a work order automatically changes to the **Assigned To** employee when the task status changes to current.

4. If a particular shop is assigned the task, select a **Shop**.
5. Enter the **Estimated days to complete** the task.
6. Optional: Type in a **Response Label** if a task-specific response is needed for the work order (up to 11 characters). This allows the **Response** for each task to be defined to track accomplishments or whatever the organization desires, such as the number of **Sq ft** landscaped, the number of **Linear ft** cleaned or plowed, the number of **Cubic yards** of fill used, the number of **Curb miles** removed, **Count**, **# of bags** used or filled, the number of **Structures** inspected, the number of **Pumping hrs**, the number of **Potholes** filled, the **Cubic tons** of trash picked up, etc.

Search By	NAME	STCLEAN			
SeqID	Task	Description	Assigned To	Shop	Comments
	STCLEAN	Street cleaning	MESSER, TOM A		
Sequence	1	Linear ft.			
Assigned To	MESSER, TOM A	Status			

**NOTE:** If the **Response Label** field is left blank, it defaults to **Response** (although in some older databases, it may default to a null response).

**TIP:** The column header on the work order **Task** pane will still be labeled **Response** (as different tasks can have different units associated to them) but the user can reload the item back into the fields to view the type of response entered in the field.

Response
2500

- For Miner & Miner Designer users: Check the **Notify M M** box to identify that task as an initiator of the planning functions of the interface.
- Click the **Save** button to add the task to the database.
- Type in the task **Keywords**, clicking the **Add** button after each one to add it to the **Value** list.
- Optional: If only certain valid values are wanted for the response field in step 6, add **Response Codes** by typing in an associated **Code** and clicking the **Add** button to list the **Code**.
- Optional: Type in any predefined **Comments**, up to 250 characters in length, to include with the task on the work order.

If values are the same for another task, change the task **Name** and click the **Clone** button. Make any necessary changes and click the **Save** button to save the new task.

**IMPORTANT:** Do not delete tasks which have been used on work orders as this deletes the link in the Cityworks database and orphans the task information on the work order.

The **Cancel Task** checkbox allows the administrator to deactivate a task so it can no longer be added to a work order but can still be listed with historical data and used as a search parameter.

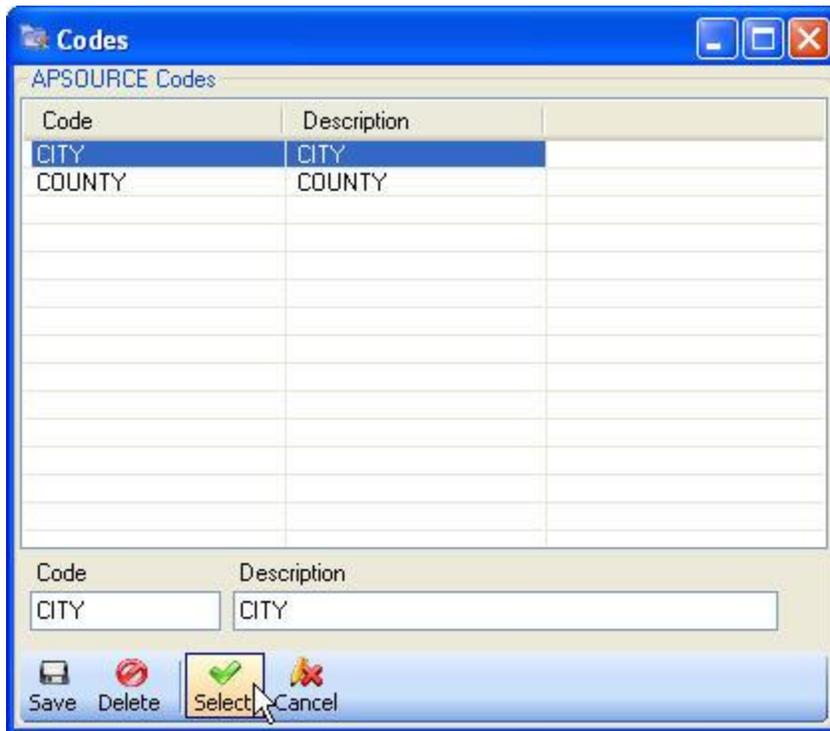
If the task hasn't been used, it may be deleted by clicking the **Delete** button and clicking **Yes** when the confirmation box opens to verify the user wants to delete the task.

## Permits

Permit information is included on work orders to allow the permit cost to be tracked and included in the calculations for work order costs when permit costs are paid by the organization. Cityworks allows any permitting costs associated with a work order to be added to the work order cost. The types of permits that can be stored with a work order are defined in **Permits**.

- Type in the **Permit Type**, 8 characters maximum, and **Description**, up to 50 characters.
- Type in the **Cost** of the permit.

3. Click in the **Source** field to open the **APSOURCE Codes** box and select the source of the permit.



- Add the **Code** and **Description** at the bottom of the box (or in **Others > Codes > APSOURCE**).
4. Optional: Type in any **Comments**, up to 250 characters, to include any information about the permit, such as permit requirements, contact person, address, phone, email, related account information, etc.

To modify or update an existing permit, double-click on it in the list to load the fields. Make the necessary changes and click the **Save** button.

**NOTE:** The **Permit Type** field may not be edited, except by adding the new **Permit Type** and deleting the old one. Since the current information is stored in a different table, the historical data remains intact.

## Custom Inspection Templates

**Custom Inspection Templates** are designed to create customized inspections for gathering and tracking any observations an organization wishes on any desired assets. Questions can be set up to gather specific information and results can be selected from standard responses for valid values or may be free-form entry.

**NOTE:** While some field mapping is set up for some predefined Cityworks inspections and tests to automatically update condition or asset attributes in the geodatabase, this feature is not available for custom inspections.

Besides setting up the template here, select the entity on the **Asset Inspection Configuration** window under **Asset Setup** for the **Inspection Type** of **INSP** (with **Custom Inspection** as the **Description**) to provide access to the custom inspection template from a work order created on that asset type. See the section [Asset Inspection Configuration](#) for more details.

## Condition Score

Weights and scores are used to calculate a condition score and are set in the **Observations** and **Results** tabs. This information is used to determine where to allocate maintenance money most effectively and visually see any trouble spots on the map. By default the colors on the map mean the following:

- No Score = blue
- 0-33 = green
- 34-66 = yellow
- 67-100 = red

In Designer, each question is assigned a weight, and each answer is assigned a score. Once an inspection is complete, the final condition score is calculated. The condition score is a normalized value from 0-100.

**NOTE:** Condition scoring is not supported with a **Branch Q/A Model**.

The logic for the condition score is as follows:

- Maximum total score is calculated (sum of weight multiplied by the maximum score of each question).
- Total score is calculated (sum of weight multiplied by the score of each question).
- Condition score is calculated (total score divided by the maximum total score, multiplied by 100).

The examples have the following weights and scores assigned.

	Weight
Question 1	20
Question 2	10

Question 1	Score
Answer 1	2
Answer 2	1
Answer 3	0

Question 2	Score
Answer 1	10
Answer 2	5
Answer 3	0

Example 1:

For Question 1, Answer 2 was selected.

For Question 2, Answer 1 was selected.

Max Total Score is  $20 * 2 + 10 * 10 = 40 + 100 = 140$

Total Score is  $20 * 1 + 10 * 10 = 20 + 100 = 120$

Condition Score is  $120 / 140 * 100 = 86$

Example 2:

For Question 1, Answer 3 was selected.

For Question 2, Answer 2 was selected.

Max Total Score is  $20 * 2 + 10 * 10 = 40 + 100 = 140$

Total Score is  $20 * 0 + 10 * 5 = 0 + 50 = 50$

Condition Score is  $50 / 140 * 100 = 36$

Custom inspections may be branched where the response to the observation leads to the next observation or linear where all the observations are visible and the user responds only to the relevant ones.

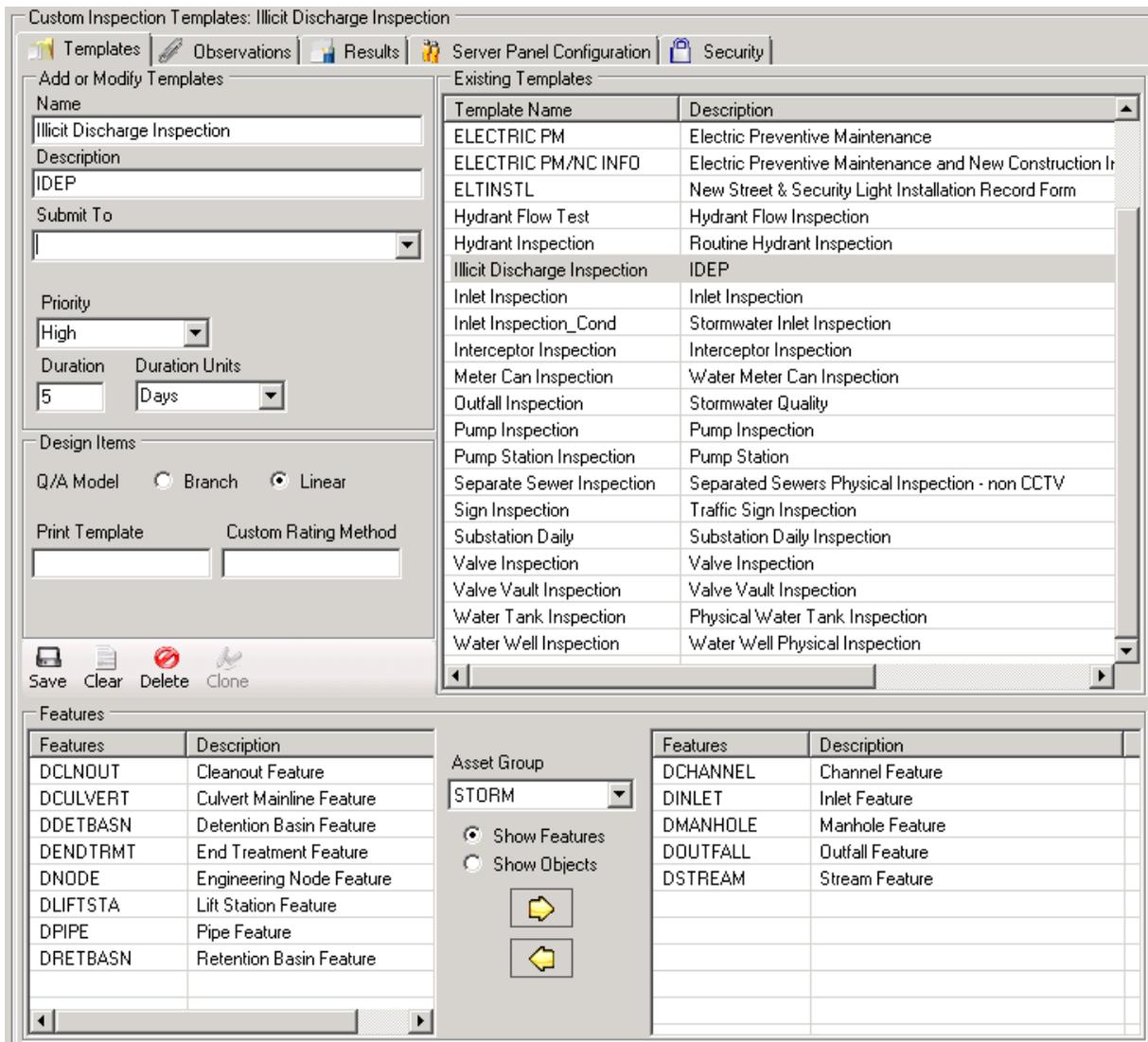
**NOTE: Custom Inspection Templates are similar to Request Templates Questions and Answers.**

Cityworks Server AMS administrators will have an additional **Security** tab as well as a **Server Panel Configuration** tab for **Linear** inspections to set up the inspection panels.

## Templates Tab

The **Templates** tab provides the basic information about a **Custom Inspection Template** including which asset type(s) the inspection can be performed on. This custom inspection will be available on work orders when these assets are selected.

1. Type in the **Name** and **Description** for the custom inspection template.



2. If desired, select an employee for the **Submit To** field. Note that this list is configured under **Employee Relates**, so if the desired employee does not appear in the list, he/she needs to be added under **Employee Relates**.
3. Server AMS users: Select the **Priority** from the dropdown selection, type in the **Duration**, and select the **Duration Units** from the dropdown for **Hours** or **Days**.
4. Select the **Q/A Model** for the questions and answers.
  - **Branch**—Displays one question at a time; the answer determines the next question.
  - **Linear**—Show all questions at once; the user responds to only the relevant questions.

**NOTE:** Condition scoring is not supported with a **Branch** Q/A Model.

5. Server AMS users: If any custom ratings have been programmed into the system, type the name into the **Custom Rating Method** field.
6. Click the **Save** button to save the inspection template and activate the rest of the window.

7. Select the **Template Name** from the **Existing Templates** list on the upper right pane.
8. Select the desired **Asset Group** from the dropdown in the lower center pane.
9. Select the radio button option for **Show Features** or **Show Objects** to list the feature or object classes from the selected **Asset Group** on the left.
10. Select the feature(s) or object(s) from the list on the left and click the right arrow to move the selections to the right (or double-click on each desired selection).

**NOTE:** The left arrow or a double-click moves a selected feature or object from the right pane back to the list on the left. Each feature or object in the **Asset Group** is listed either on the right or left.

11. Click the **Save** button to save the asset(s) with the template.

**TIP:** Moving the assets to the right does not save this information to the database.

If necessary, an existing template may be deleted by selecting the template from the list and clicking the **Delete** button. Click **Yes** when the confirmation box opens to delete the template.

**IMPORTANT:** Deleting a template removes the template from use and also prevents viewing the historical data. Even though most of the information remains in the Cityworks database, there is no way to display it in Cityworks once the custom inspection template is deleted.

## Observations Tab

The **Observations** tab outlines the possible questions related to the custom inspection. Weights are assigned to each question which is used to calculate the [Condition Score](#). When creating a **Branch** series, every question will require a response to be entered by the inspector to move on to the next observation.

1. Switch to the **Observations** tab.

Sequence	Question	Weight	Type
1	Is public safety a concern?	60	Single
2	Visible defects?	50	Single
3	Obstructions?	0	Multiple
4	Overall condition	0	Multiple
5	Which asset is inspected?	0	Assets

2. Type in each **Question**, assign a **Weight** (if applicable), select the **Answer Type**, and click the **Update** button to list the question in the list.

**NOTE:** The **Answer Type** can be **Single**, **Multiple**, or **Assets**. **Single** supports all answer formats, **Multiple** supports only the **This Text** answer format, and **Assets** supports only the **Any Free-form Response** answer format. A **Weight** can only be assigned if the **Answer Type** is **Single**.

3. Enter all applicable questions with weights and answer types.

**NOTE:** Click the **Weights** icon to assign weights to all questions in the list from one screen. Click **Save**. **Weights** are used to calculate the condition score.

4. If necessary, switch the **Sequence** of the **Question** by selecting it in the list and clicking the up or down arrow to move it to the desired position (or drag and drop).

To modify a question, double-click on it in the list to load it into the **Question** field, make the desired change, and click the **Update** button. If necessary, it may be deleted by clicking the **Delete** button, in which case a confirmation box opens to confirm the deletion from the database.

## Results Tab

The **Results** tab allows the administrator to set up the types of answers for each observation. If using the **Branch Q/A Model**, follow-up questions are also set up for the series using the **Next Observation** field. This field is inactive for a **Linear Q/A Model**. Scores are assigned to each answer which is used to calculate the [Condition Score](#).

1. Switch to the **Results** tab.

Question	Answer	Score	Next Question
2 Is public safety a concern?	YES	8	3 Visible defects?
2 Is public safety a concern?	NO	6	3 Visible defects?

2. Select an **Observation** from the dropdown list.

The **Answer type** for the observation is displayed above the dropdown. The fields displayed on the Results panel will vary depending on the **Answer type** used.

- For **Branch**: Select the **Next Observation** from the dropdown list for the question to follow the given answer.
- Enter a **Score** to be used to calculate the condition score.
- Select the radio button for the desired **Answer Format**.

**NOTE:** Only one type of format may be used per question.

- This Text**—Allows for a series of valid values to be entered to keep the answers consistent. Type a valid value in the field.

**TIP:** It may be helpful to allow for a response of **Other** when using **This Text**, in case the answer needed hasn't been listed.

- Yes/No/Unknown**—Select the radio button option.

**NOTE:** Select only **Yes/No** if no **Unknown** response is anticipated.

- Date**
- Any Free-form Response**—Open-ended question so inspector can enter any answer.
- Checkbox**
- Default Checked**

- Optional: Enter **Instructions** if certain procedures are to be followed for the given situation.
- Optional: Enter **Explanations** to provide more details about the answer.
- Click the **Update** button to add the answer to the list.
- Follow steps 1-7 to add the next applicable answer for the observation until all answers have been entered.

**NOTE:** For **Date** or **Any Free-form Response**, only one answer is allowed.

- Click the **Scores** icon to open **Update Scores** and assign a score to each answer. Scores are used to calculate the condition score. Click **Save**.

Answer	Score
UNKNOWN	8

- Add answers and scores for the rest of the observations.

If necessary, an answer may be updated by double-clicking on it in the list to load it back to the top pane, editing the information, and clicking the **Update** button. Click **Yes** when the confirmation box opens. This prevents the user from adding an answer that already exists in the database.

## Server Panel Configuration Tab

The **Server Panel Configuration** tab allows the administrator to configure how to display custom inspection observations and results on the right pane of an inspection. The observations can be grouped into panels with subheadings. This tab is only visible when connecting to a Server database and the **Q/A Model** is set to **Linear** on the **General** tab, as it does not apply to the **Branch** option.

1. Switch to the **Server Panel Configuration** tab.

Title Bar	Sequence
Hydrant Inspection Observations	1
Nozzle Size	1
General Information	2
Check the items which need repair or are in poor condition	2

Sequence	Question
1	Is public safety a...
2	Visible defects?
3	Obstructions?
4	Overall condition
5	Which asset is i...

Text	Row	Required
------	-----	----------

2. Type in the **Title Bar Text** for the first subheading.
3. Enter a **Sequence** for the title bar.
4. Click **Save** to save the information to the right pane.
5. If any questions are required, select them from the lower left **Observations** pane, check the **Required** box, and move them to the right **Items** pane with the right arrow.

**TIP:** All **Required** questions must be answered before the inspection can be closed so only select the ones that the organization wishes to track every time this custom inspection is performed.

6. Select the other questions to list from the panel on the left and move them to the right pane to add them to the database.

**TIP:** It is not necessary to click the **Save** button again for the observations to be added to this page panel.

7. Click the **Clear** button to clear the fields and place the cursor back in the **Title Bar Text** field.
8. Add each additional subheading with the corresponding observations by repeating steps 2-6.

Once all the panels have been added, the fields can be reloaded by clicking on them in the **Observation Group** pane to modify the information.

## Security Tab

The **Security** tab allows the administrator to assign security rights for viewing, adding, updating, and deleting custom inspections. Since Cityworks Server AMS allows custom inspections to be created independent of work orders, security is set up as part of the custom inspection template.

1. Switch to the **Security** tab.

Domain	Group	Table	View	Add	Update	Delete	
KSM	ZLEVEL4	INSPECTION	1	1	1	1	
KSM	ZLEVEL2	INSPECTION	1	1	1	1	
KSM	ZLEVEL1	INSPECTION	1	1	1	1	
KSM	ZADMIN	INSPECTION	1	1	1	1	
KSM	ZLEVEL1_MAN	INSPECTION	1	0	0	1	
KSM	ZLEVEL3	INSPECTION	1	1	0	1	

2. Select the **Domain** from the dropdown list.

**NOTE:** Custom inspection privileges may be assigned to multiple domains, especially **View** rights.

3. Select the desired group(s) from the **Name** list who are assigned the same user rights.
4. Select the desired tables.
5. Check the applicable box(es) for the **Security Options**.

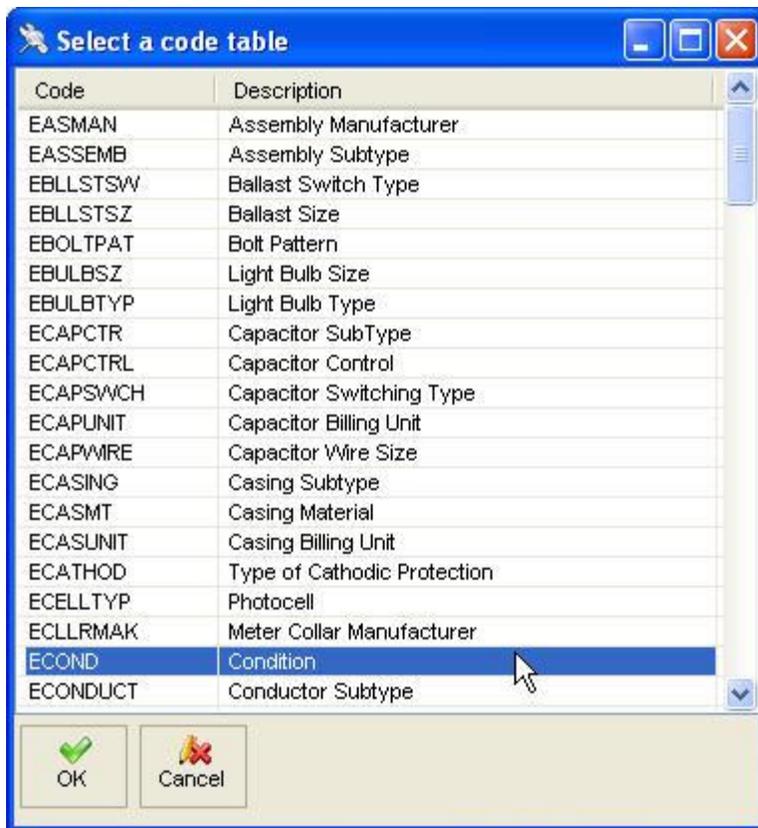
- **View**—Allows the user to open and view the information on an existing inspection.
- **Add**—Allows the user to add the custom inspection to a work order.

**NOTE:** Server AMS users with **Add** privileges can also create an independent custom inspection which is not tied to a work order.

- **Update**—Allows the user to update inspection fields once the inspection is saved.
  - **Delete**—Allows the user to delete inspections.
6. Click the **Update** button to list the information on the lower pane.
  7. Follow steps 1-6 to add all groups in all domains who need access to the custom inspection.

All assigned permissions can be viewed by selecting the inspection from the **Existing Templates** list on the **Templates** tab and clicking on the **Security** tab.





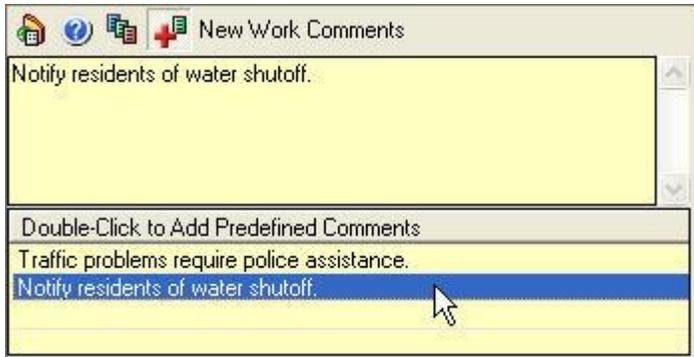
- **Alphanumeric value**—Allows the user to type in the response.

4. Click the **Save** button to list the **Observation** in the list.
5. Continue adding all the observations for the given table by repeating these steps.
6. Switch the **Inspection Table Name**, adding all the observations for each table.

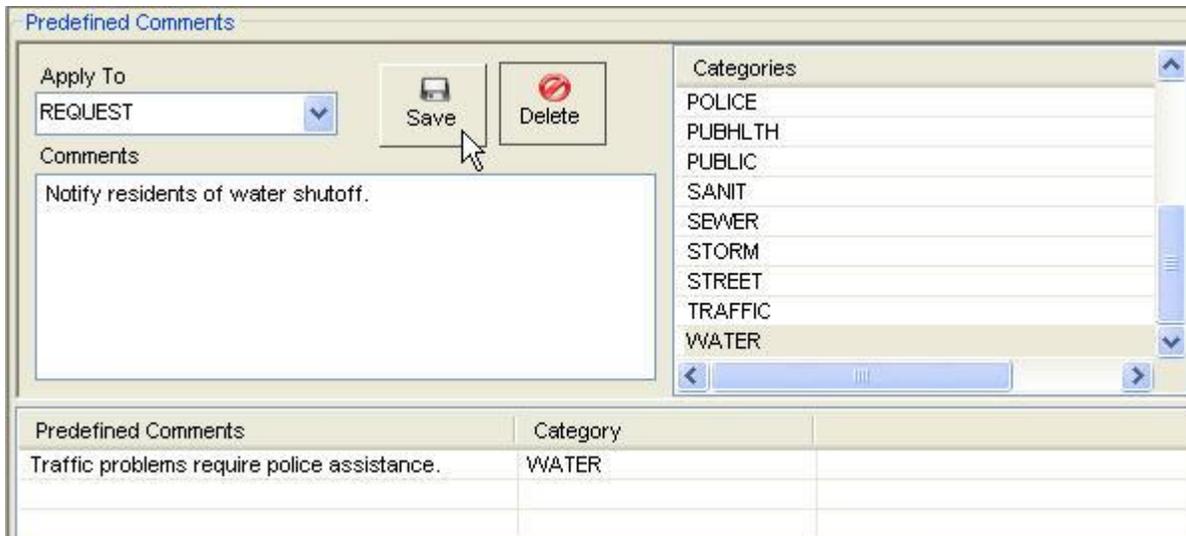
An **Observation** may be deleted by selecting it from the list to load it in the upper pane and clicking the **Delete** button. No confirmation box opens.

## Predefined Comments

**Predefined Comments** may be entered for a selection list on service requests or work orders for the selected category. This is especially helpful for field users to facilitate and simplify data entry for frequently-used comments or to standardize comments.



1. Select either **Request** or **Work Order** from the **Apply To** dropdown.
2. Type in any **Comments**, up to 250 characters, wanted on the request or work order.



3. Select the desired asset group(s) from the **Categories** list to which the **Comments** apply.

**NOTE:** The **Categories** list for service requests is populated from the **APROBCAT** code type, and from the **AWOCAT** code type for work orders (both are found under **Others > Codes**).

4. Click the **Save** button to list the **Predefined Comments** in the list.

**NOTE:** If necessary, an existing comment may be deleted.

5. Continue adding all desired **Comments** for all **Categories**.

## Template Security

Employee permissions to view, add, update, delete, and view costs are set up on the **Template Security** window and assigned by groups for each template for six work order tables, three service request tables, and the inspection table for custom inspection templates. Template security may also be set on the **Security** tabs of either **Request Templates** or **Work Order Templates**. All security for custom inspection templates is added here, although privileges can be granted for a specific inspection from the inspection itself. In 2012.1,

the group rights for work orders, service requests, and inspections were simplified. Please read Knowledge Base article [10619](#) for more information on the Group Rights Migration tool.

1. Select the **Template Domain** from the dropdown.

Code	ApplyToEntity	Domain	Group	Table	View	Add	Update	Delete
Lower Ma...	SMANHOLE	KSM	ZADMIN	EQUIPMENTCO...	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZADMIN	LABORCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZADMIN	LINEITEMCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZADMIN	MATERIALCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZADMIN	WORKORDER	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZADMIN	WOTASK	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZLEVEL1	EQUIPMENTCO...	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZLEVEL1	LABORCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZLEVEL1	LINEITEMCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZLEVEL1	MATERIALCOST	1	1	1	1
Lower Ma...	SMANHOLE	KSM	ZLEVEL1	WORKORDER	1	1	1	1

2. Select the radio button option for **Work Order**, **Service Request**, or **Inspections**.

**NOTE:** *Inspections applies only to custom inspections.*

3. Select the **Group Domains** using the dropdown list to populate the related **Group Name** area with the employee groups from the desired domain.

**TIP:** *If working in more than one domain, be sure the **Group Domains** selection matches the **Template Domains** selection, unless employees from a different domain are needed for the work order, service request, or inspection since groups from the first domain are listed by default.*

4. Select the **Group Name**.

5. Select a **Table** or multiple tables if **Group Security** settings are the same for all tables.

**TIP:** Azteca Systems Inc. strongly encourages that **Delete** permission for **WorkOrder**, **Request**, and **Inspection** tables be limited to only select users. However, all workers who add labor, equipment, or material costs also need **Delete** privileges as that is the only way to correct errors when entering this data.

**Work Order** tables:

- **WorkOrder**—Access to general work order information.
- **LaborCost**—Access to labor information, such as the employee and hours worked.
- **EquipmentCost**—Access to equipment costs.
- **MaterialCost**—Access to material costs.
- **WOTask**—Access to work order task information.
- **LineItemCost**—Access to contract line items.

**NOTE:** To activate the **Costs** option on the **Tools** menu of a work order (which opens the **Work Order Cost Summary** form), the user must be in a group which is assigned **View** rights to the **WorkOrder**, **LaborCost**, **Equipment Cost**, and **Material Costs** tables.

**Service Request** tables:

- **Request**—Access to general service request information.
- **CustomerCall**—Access to customer account information.
- **RequestLabor**—Access to the labor information on a request, including the employee labor rate.

**Inspection** table (for custom inspections only):

- **Inspection**—Access to custom inspection templates.

6. Check the applicable boxes for **Group Security**.

- **View**—Allows the user to view the table information.

**NOTE:** **View** privileges should be assigned to all groups working with Cityworks.

- **Add**—Allows the user to add information to the selected table.
- **Update**—Allows the user to change information.

**NOTE:** **Update** does not apply to the cost tables. To update cost tables, a user must have **Add** and **Delete** permissions for **LaborCost**, **EquipmentCost**, and **MaterialCost** tables.

- **Delete**—Allows the user to delete information.

**TIP:** Azteca Systems Inc. recommends limiting the number of users with permission to **Delete** work orders from the **WorkOrder** table and service requests from the **Request** table. An organization may prefer employees cancel work orders and service requests rather than deleting them since the IDs are sequentially assigned and can then be accounted for.

- **View Cost**—Allows the user to see employee labor rates as part of the cost.

**NOTE:** Not checking the **View Cost** also means the **Labor Cost** display field in request or work order searches will not be listed for users in these groups.

7. Click the **Save** button to add the information to the template and list it on the lower pane.

Click the **Print** button to print the list on the default printer and click **Yes** when the confirmation box opens.

Workorder Template Security Settings. Printed on: 4/11/2008 11:03:05 AM

Template ID	Code	ApplyToEntity	Domain	Group	Table	View	Add	Update	Delete	View Cost	Group ID
145	Chipseal	RRoad	PW	SUPERVISOR	EQUIPMENTCOST	1	1	1	1	1	2
145	Chipseal	RRoad	PW	SUPERVISOR	LABORCOST	1	1	1	1	1	2
145	Chipseal	RRoad	PW	SUPERVISOR	MATERIALCOST	1	1	1	1	1	2
145	Chipseal	RRoad	PW	SUPERVISOR	WORKORDER	1	1	1	0	1	2
145	Chipseal	RRoad	PW	SUPERVISOR	WOTASK	1	1	1	1	1	2
145	Chipseal	RRoad	PW	CALL TAKER	EQUIPMENTCOST	1	0	0	1	0	24
145	Chipseal	RRoad	PW	CALL TAKER	LABORCOST	1	0	0	1	0	24
145	Chipseal	RRoad	PW	CALL TAKER	MATERIALCOST	1	0	0	1	0	24
145	Chipseal	RRoad	PW	CALL TAKER	WORKORDER	1	1	1	1	0	24
145	Chipseal	RRoad	PW	CALL TAKER	WOTASK	1	0	0	1	0	24
145	Chipseal	RRoad	PW	STREET CREW 1	EQUIPMENTCOST	1	1	1	1	1	25
145	Chipseal	RRoad	PW	STREET CREW 1	LABORCOST	1	1	1	1	0	25
145	Chipseal	RRoad	PW	STREET CREW 1	MATERIALCOST	1	1	1	1	1	25
145	Chipseal	RRoad	PW	STREET CREW 1	WORKORDER	1	1	1	0	0	25
145	Chipseal	RRoad	PW	STREET CREW 1	WOTASK	1	1	1	1	1	25

## Employee Relates

The **Employee Relates** window is used to populate the employee dropdown lists in the Cityworks software for certain employee fields on service requests, work orders, tasks, projects, inspections/tests, and/or Cityworks Storeroom.

In Cityworks 4.5 SP4, the **EditAfterClose** field name was added to allow a user to edit a closed request, work order, or inspection by assigning them the same rights they would have it if was open.

In Cityworks 2010.1 SP1, a new table called **Search** with a field name of **ViewCost** was added to allow employees the right to view labor cost when searching work orders and requests.

In Cityworks 2012.1, a new Project **InitiatedBy** field was added to allow the domain administrator to grant permission to any user to initiate, update, or delete a project. Also, a new table called **EquipChangeout** with a field name of **ChangedBy** was added to allow employees access to Equipment Changeout data. A field called **CancelledBy** was added to the **Inspection** table.

Employee Relates

Current Domain **KSM**

Events

Objects	Table	Field Name
SEWER	CONTRACT	CHANGEDBY
STORERM	EQUIPCHANGEOUT	
STORM	INSPECTION	
STREET	PROBLEMLEAF	
WATER	PROJECT	
WORKMGR	REQUEST	
DESIGNER	SEARCH	

Employee Groups

Groups	Name	Title
CITY MANAGER	BOYCE, DARRIN	Water Supervisor
PwUTIL	PwADMIN, PwADMIN	Public Works/Utilities Administrator
FORESTRY	WSDADMIN,	Water/Sewer/Storm Water Administra...
PLANNING		
GUEST		
AIRPORT		
SUP		

Add
  Remove
  Print Relates

Table Name	Field Name	Employee
EQUIPCHANGEOUT	CHANGEDBY	PwADMIN, PwADMIN

V2012.1

Permission for some users to access some of the Designer functions may also be assigned, such as allowing an employee to update employee labor rates, contractors, equipment, materials, permits, etc. If selecting **Designer** from the **Objects** list, the boldface functions from the directory are listed in the **Table**. When one of these is selected, the contents are listed under **Field Name**.

**IMPORTANT:** Full access to any of the functionality within that window is provided when Designer permissions are assigned to a user.

1. Select the **Current Domain** from the dropdown list.
2. Select the desired **Objects** on the upper left pane to populate the associated **Table** list on the center pane.
3. Select the **Table** to populate the corresponding **Field Name** list on the right pane.

Events

Objects	Table	Field Name
ELECTRIC	CONTRACT	CANCELLEDBY
SEWER	INSPECTION	EDITAFTERCLOSE
STORERM	PROBLEMLEAF	INITIATEDBY
STORM	PROJECT	REQUESTEDBY
STREET	REQUEST	SUBMITTO
WATER	TASKLEAF	SUPERVISOR
WORKMGR	<b>WORKORDER</b>	WOCLOSEDBY
DESIGNER		WORKCOMPLETEDBY

Objects	Table	Field Name
ELECTRIC	Administration	Cityworks DBA
SEWER	ArcGIS Setup	Cityworks Domains
STORERM	Storeroom	Storeroom Domains
STORM	Others	Stake Domains
STREET	Cityworks Setup	Password
WATER		Employees
WORKMGR		
DESIGNER		

4. Select the **Field Name** to populate.
5. Select the employee group(s) from the **Employee Groups** list on the center pane to list the employees on the right, using **<Shift + click>** or **<Ctrl + click>** for multiple groups.
6. Select the employee(s) from the list to assign to the **Field Name**.
7. Click the **Add** button to link the employees to the **Field Name** for selection on the Cityworks form and list them on the lower pane.

**NOTE:** To change the information in the list, select and click the **Remove** button.

8. Continue to add the desired employees to each **Object** and **Field Name** by repeating these steps.

Once the **Employee Relates** are set up, all the employees associated to the selected table are displayed on the lower pane. Selecting a **Field Name** lists just those employees associated to that field.

If desired, print this list to the user's default printer by clicking on the **Print Relates** button and clicking **Yes** when the confirmation box opens.

Employee Relates to Table Fields. Printed on: 4/11/2008 3:35:12 PM

Table Name	Field Name	Employee	DomainID	EmployeeSID	ObjectID
REQUEST	INITIATEDBY	GUNTER, BOBBY D	2	4031	862
REQUEST	INITIATEDBY	ROBERTS, GUY F	2	5762	4991
REQUEST	INITIATEDBY	BAXTER, CHARLIE	2	10398	5594
REQUEST	INITIATEDBY	LARSEN, FREDERICK J	2	10397	5597
REQUEST	INITIATEDBY	HASLAM, BRIAN L	2	10371	5625
REQUEST	INITIATEDBY	WOLFE, ED	2	10278	5626

## Work Order Template Classes

**NOTE:** Work Order Template Classes are for Server AMS only.

**Work Order Template Classes** allows the automation of the work order template selection to be based on up to three attribute values of an asset. This may be useful when different tasks or work procedures need to be followed. For example, tree pruning task and equipment may be a function of diameter and species or pipe flushing may be based on the diameter of the pipe. Only one asset may be selected per work order when using classes.

**NOTE:** Class configuration can also be loaded from a delimited text file.

## Classes Tab

The **Classes** tab is used to define the class and select the asset, the applicable rule fields, and default work order templates assigned to the class.

1. Select the desired **Asset Group** from the dropdown.

Work Order Template Classes

Current Domain: PW

Classes | Rule Sets | Load

Asset Group: PARK & GROUNDS

Features  Objects

Assets

Asset
Court
Fence
Fitting
Flower Garden
Lines
Park Bench
Park Maintenance Bldg
Park Playground Equipment
Park Tree
Playing Field
Sprinkler Head
Sprinkler Line
Sprinkler Network Junctions
Swimming Pool
System Valve
Underground Enclosure

Rule Fields

Description: Tree Pruning

Rule 1 Field: CommonName

Rule 2 Field: TreeDiameter

Rule 3 Field:

Work Order Templates

Description
Cabling
Check City Tree Health
Check Health of Private Tree
Fertilization
Forestry - Other
Hanging Branches
Infect Infestation
Inspect
Inventory
Pickup Branches
Plant Tree

Update Clear Delete Auto

Existing Classes

Description	Entity	Rule 1 Field	Rule 2 Field	Rule 3 Field	Default
Tree Pruning	TREE	CommonName	TreeDiameter		Hanging

Ready

2. Select the radio button for the asset type, **Features** or **Objects**, to populate the corresponding **Assets** list.
3. Type in the **Description** of the class.

**NOTE:** The user selects the class **Description** when creating a work order; however, the actual work order template is selected by the software according to the defined rules for the asset values.

4. Select the applicable asset field from each dropdown to define up to three rule fields.

**TIP:** Attributes will only display when connected to the geodatabase. Otherwise type in the field name.

5. Select the **Description** for the default work order template from the **Default Work Order Templates** list to use when asset attribute values do not resolve to a rule set.
6. Click the **Update** button to save the information to the **Existing Classes** list.
7. Repeat the steps for all other asset classes desired.

## Rule Sets Tab

The **Rule Sets** tab is used to assign specific work order templates to values in the rule sets.

1. Switch to the **Rule Sets** tab.

The screenshot shows the 'Work Order Template Classes' window with the 'Rule Sets' tab selected. At the top, 'Current Domain' is set to 'KSM'. Below are three tabs: 'Classes', 'Rule Sets', and 'Load'. The 'Defined Classes' section contains a table with the following data:

Description	Entity	Rule 1 Field	Rule 2 Field	Rule 3 Field	Default WO Template
Tree Pruning	TREE	CommonName	TreeDiameter		Trim Tree

The 'Field Rules' section has three dropdown menus for 'Work Order Template', 'Rule 1 Field', and 'Rule 3 Field'. The 'Work Order Template' dropdown is set to 'Trim Tree', 'Rule 1 Field' is set to '76 Elm', and 'Rule 3 Field' is empty. The 'Rule 2 Field' dropdown is set to '8'. Below the dropdowns are icons for 'Save', 'Clear', 'Delete', and 'Auto'. At the bottom is a table with the following headers:

Rule 1 Value	Rule 2 Value	Rule 3 Value	WO Template

2. Select the class from the **Defined Classes** list.
3. Select the **Work Order Template** from the dropdown.
4. Select the applicable value from each active rule set field.
5. Click the **Save** button to save the information.
6. Continue to select work order templates for each possible set of values for each class.

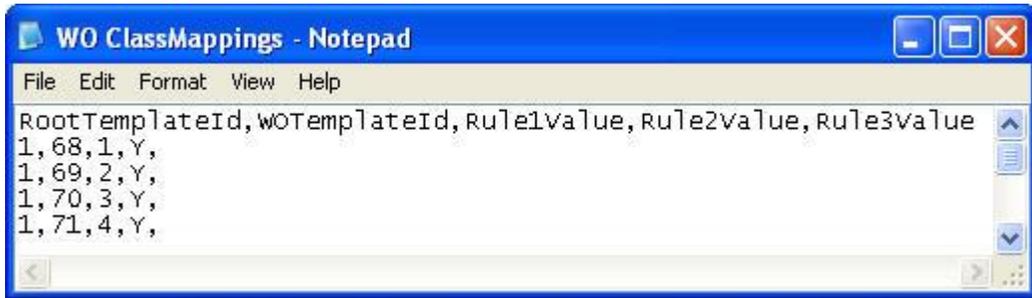
**NOTE:** For values which are not assigned on the **Rule Sets** tab, the default work order template will be used.

## Load Tab

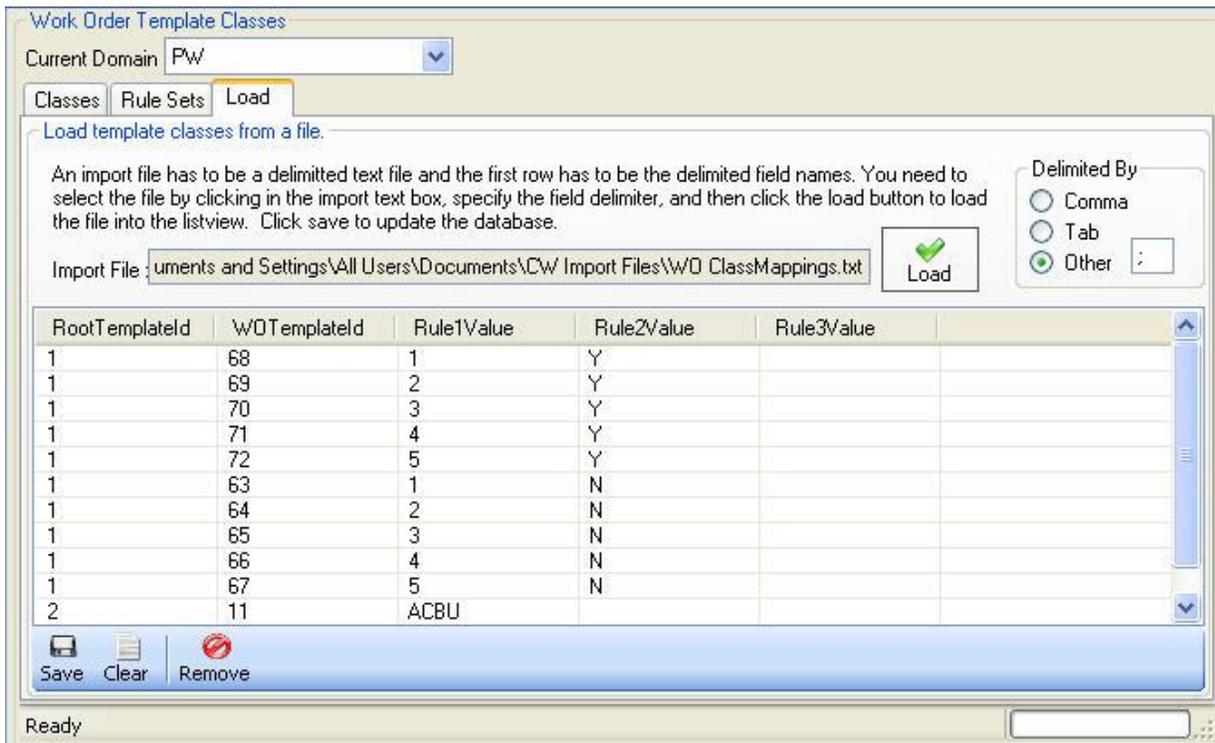
The **Load** tab is used to load rule set information already saved in a file. The file must contain these fields in this order with the first row consisting of these field names. See screenshot below for an example.

- **RootTemplateId**
- **WOTemplateId**
- **Rule1Value**
- **Rule2Value**

- **Rule3Value**



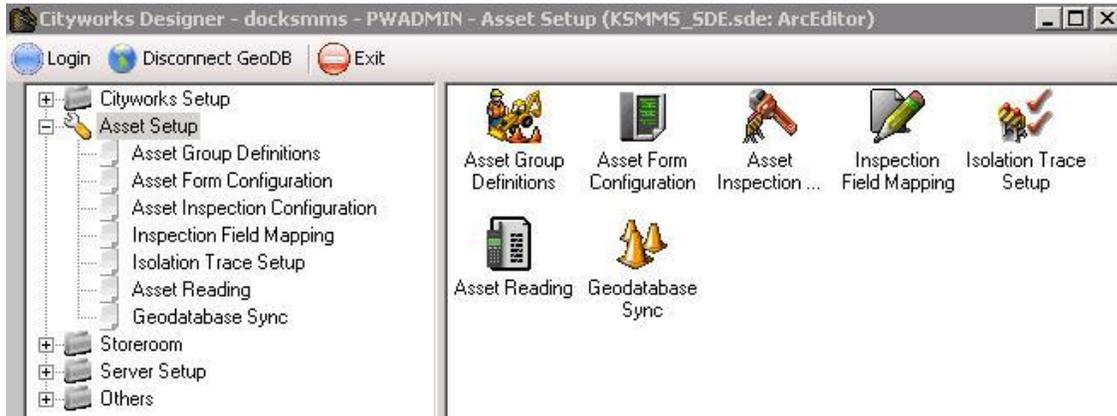
1. Switch to the **Load** tab.



2. Click in the **Import File** field to open the browser box.
3. Navigate to the file and click **Open** (or double-click on the file).
4. Select the **Delimited By** field.
  - **Comma**
  - **Tab**
  - **Other**—Specify the delimiter in the box that opens when this option is selected. A semi-colon is the default.
5. Click the **Load** button to load the file.

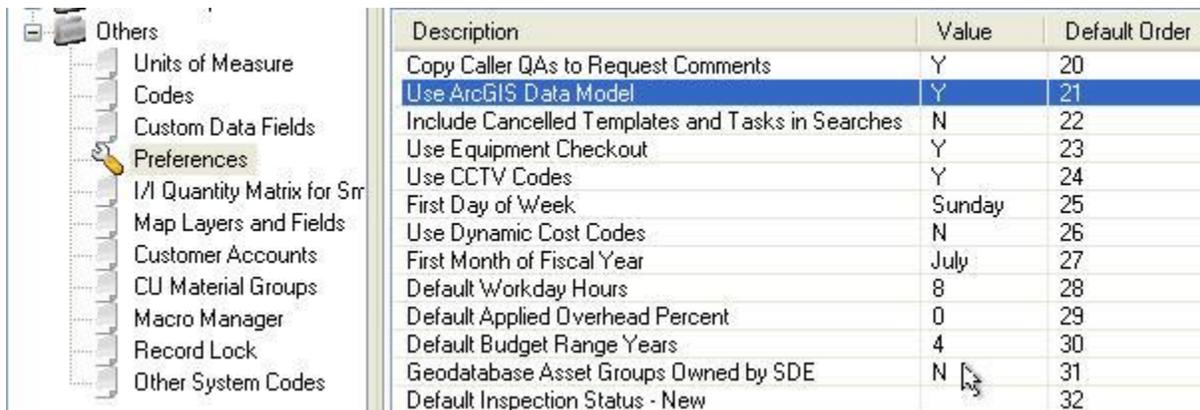
# Asset Setup

**Asset Setup** functions configure Cityworks to interact with ArcGIS. These settings allow the domain administrator to filter out GIS layers that are not relevant to Cityworks asset management and establish pointers to the geodatabase objects that tell Cityworks where to look for information when accessing the geodatabase.



To access this group of functions, the **Use ArcGIS Data Model (#21)** value must be set to **Y** on **Others > Preferences**. This is the default setting.

**IMPORTANT:** With a new domain and database, this preference must be saved before Designer can be used to set up any other domain functions. Double-click (or press the space bar) in the **Value** field to toggle to **N** (no) if using ArcView 3.x.



Also select the **Y** or **N** answer for **Geodatabase Asset Groups Owned by SDE (#32)** to indicate whether SDE is the owner of the geodatabase tables. If using a personal geodatabase, enter **N** (default value).

**NOTE:** If the RDBMS user SDE owns the Esri geodatabase tables (similar to Azteca owning the Cityworks tables), this **Y** setting lets Cityworks know it needs to alter the SQL syntax used to access them.

These functions are found under **Asset Setup**.

- **Asset Group Definitions**—Defines the asset groups with their features and related objects from the GIS layers for creating work orders and identifies the display fields for these assets on the **Cityworks Asset Identify Form**.

- **Asset Form Configuration**—Selects and configures the fields from the geodatabase to display on the **Cityworks Asset Identify Form** and identifies which fields may be added to a customized work order print template.
- **Asset Inspection Configuration**—Links the assets to their related inspections so when a work order is created on an asset, the selected inspections are available to the user.
- **Inspection Field Mapping**—Links fields in Cityworks inspection forms to the corresponding geodatabase fields so the information loads for the selected asset when the inspection or test form is opened.
- **Isolation Trace Setup**—Defines the GIS layers, addresses, customer information, etc. for isolation traces on water pipes.
- **Asset Reading**—Sets up the intervals, milestones, and thresholds with their associated work orders for asset readings to automatically generate work orders.
- **Geodatabase Sync**—Syncs up the work order entity IDs to the object IDs in the geodatabase.

## Asset Group Definitions

The **Asset Group Definitions** function identifies the GIS layers which Cityworks can create work orders on and defines the asset groups with their assets for each domain. The display field for Cityworks to use as the main identifier for each asset type is also specified along with the relationship. This information is displayed on the **Cityworks Asset Identify Form**. **Asset Group Definitions** has four tabs for defining the asset group information.

### Define Groups Tab

Asset group codes and names are defined on the **Define Groups** tab.

Asset Group Definitions

Define Groups | Assign Assets | Field Configuration | Relationships

Group Code:  Group Name:   Asset Groups Owned by SDE  
 Use mobile assets tracking system

Save Delete

Group Code	Group Name
A	AIRPORT
AFM	AIRPORT FM
BASE	PLANNING
D	STORM
E	ELECTRIC
F	FLEET
FM	FACILITIES
FOR	FORESTRY
HR	NONMAINTENANCE ACTIV
P	PARKS
R	STREET
S	SEWER
T	TRAFFIC
w	WATER
wTP	wTP

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1. Type in the **Group Code**, 8 characters maximum, and **Group Name**, 20 characters maximum.
2. Check the box **Asset Group Owned by SDE** if SDE is the owner of the geodatabase tables.

**NOTE:** This box has a dynamic link to the **Asset Groups Owned by SDE** field in the **Preferences** list. The box is checked for **Y** but if the administrator unchecks the box, the **Preferences** setting changes to **N**.

3. Check the **Use mobile assets tracking system** box if a mobile tracking system is being used.

**NOTE:** Checking the box for any asset type adds the **Mobile\_Assets** layer to the event layer dialog box and the mobile asset event layer will be available for viewing on the map.

4. Click the **Save** button to list the information in the lower pane and save it in the Cityworks database.

**NOTE:** To delete, select the group(s) from the list, click **Delete**, and click **Yes** when the confirmation box opens.

Click on a code in the list to load the information back into the fields for making any changes. Click the **Save** button and click **Yes** when the confirmation box opens.

**TIP:** If a **Group Code** is modified, the new code will be added in addition to the one that is already there. In this case, delete the one that is no longer wanted.

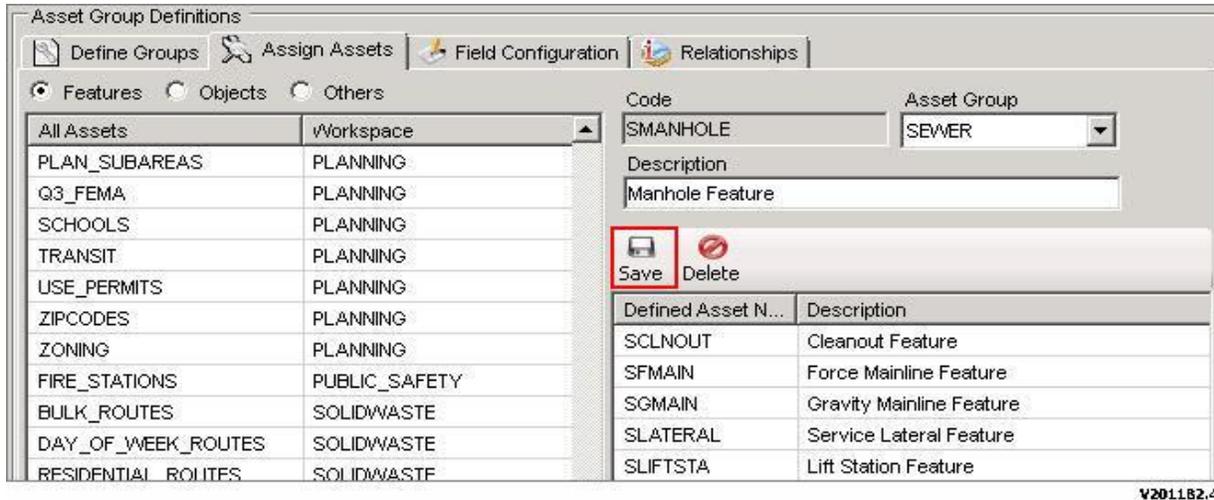
## Assign Assets Tab

Features and their related objects are assigned to asset groups on the **Assign Assets** tab. **Others** may be used to set up mock layers to perform administrative functions or other tasks not related to a map feature as long as asset readings will not be used to automatically generate work orders.

**NOTE:** *Features* are found on the map; *Objects* are linked to a map feature.

**NOTE:** A single feature class may belong to only one asset group.

1. Switch to the **Assign Assets** tab.



2. Select the radio button for **Features**, **Objects**, or **Others**:

- **Features**—Use for assets found on the map.
- **Objects**—Use for assets related at any n-level to a feature found on the map.
- **Others**—Use for any miscellaneous asset which needs to be tracked in the work management system.

**NOTE:** Asset readings can only be collected for features and objects so if readings will be gathered for an asset, it cannot be listed under **Others**.

3. Select an asset from the list on the left to load it in the gray **Code** field on top of the right pane.
4. Select the applicable **Asset Group** from the dropdown list.
5. Type in the Cityworks **Description** for the asset. This is what the user will see when creating work orders.
6. Click the **Save** button to list the information in the list on the right pane.

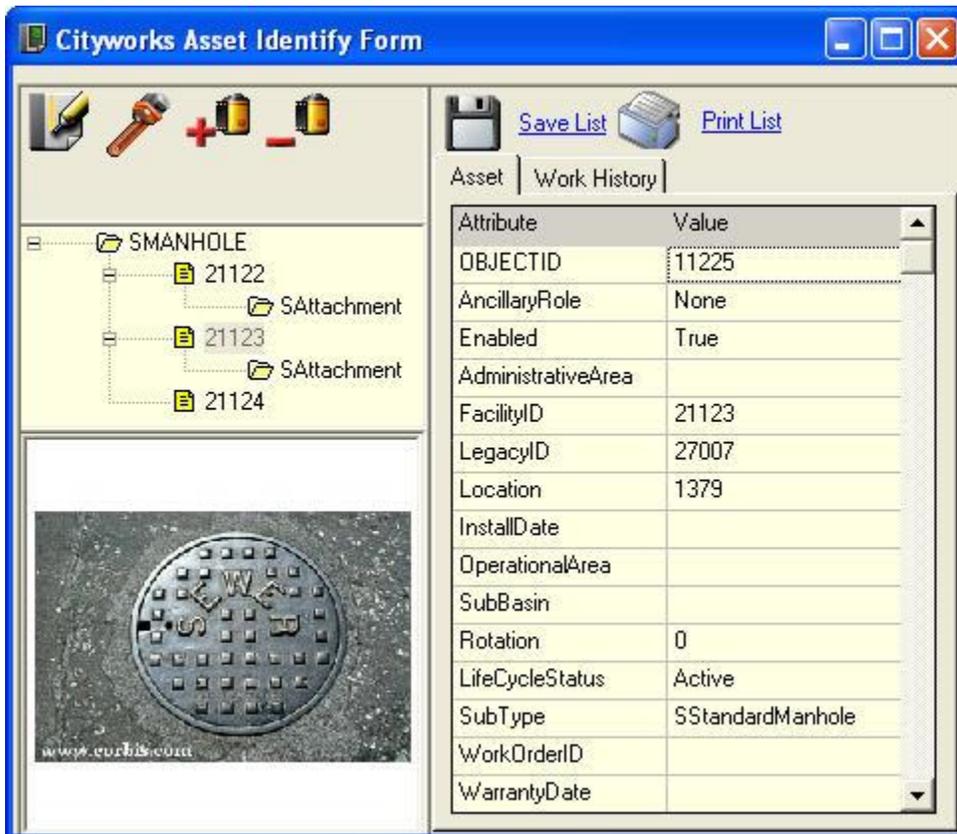
A **Description** may be changed by clicking on it in the list to load the information back into the fields. Make the desired change and click the **Save** button. Click **Yes** when the confirmation box opens to update the asset.

## Field Configuration Tab

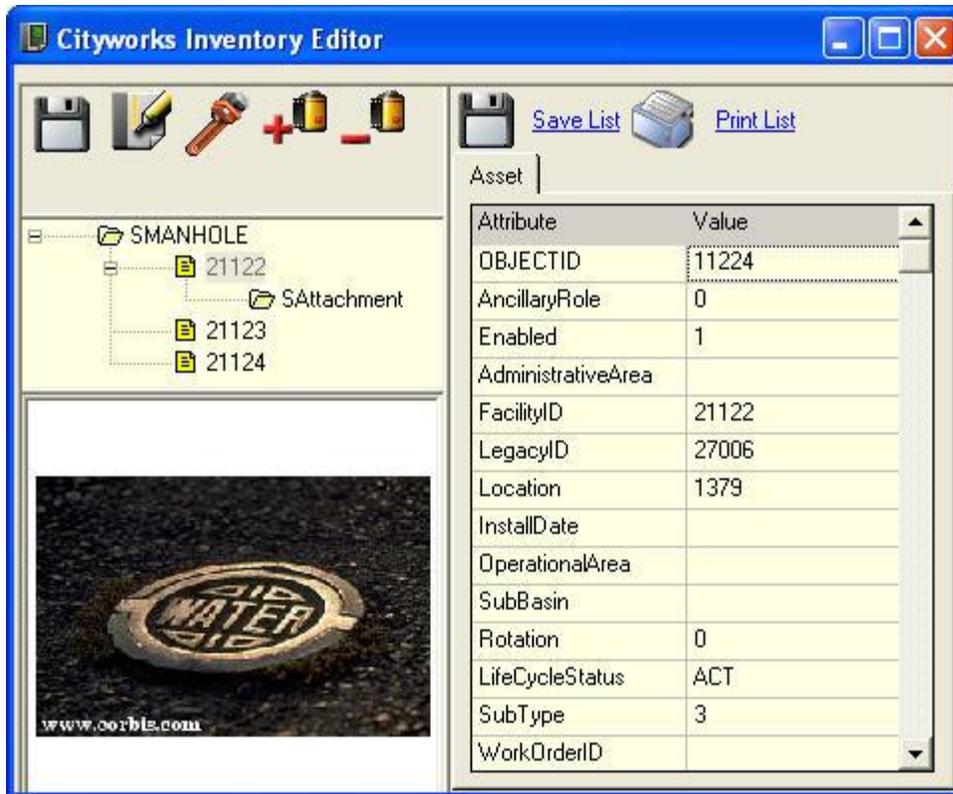
The **Field Configuration** tab serves to define which ID fields are displayed on the **Cityworks Asset Identify Form** and **Cityworks Inventory Editor** form and to set the directory location for where images are stored.

The **Display Field** selected for a related object automatically populates with the **Object ID** when a user adds a new object using the **Cityworks Inventory Editor** form right-click context menu option **Add New**.

**NOTE:** The **Cityworks Asset Identify Form** and the **Cityworks Inventory Editor** are essentially the same form; the **Identify Form** is view only while the **Inventory Editor** allows for editing fields. Images may be added in either location.



Attribute	Value
OBJECTID	11225
AncillaryRole	None
Enabled	True
AdministrativeArea	
FacilityID	21123
LegacyID	27007
Location	1379
InstallDate	
OperationalArea	
SubBasin	
Rotation	0
LifeCycleStatus	Active
SubType	SStandardManhole
WorkOrderID	
WarrantyDate	

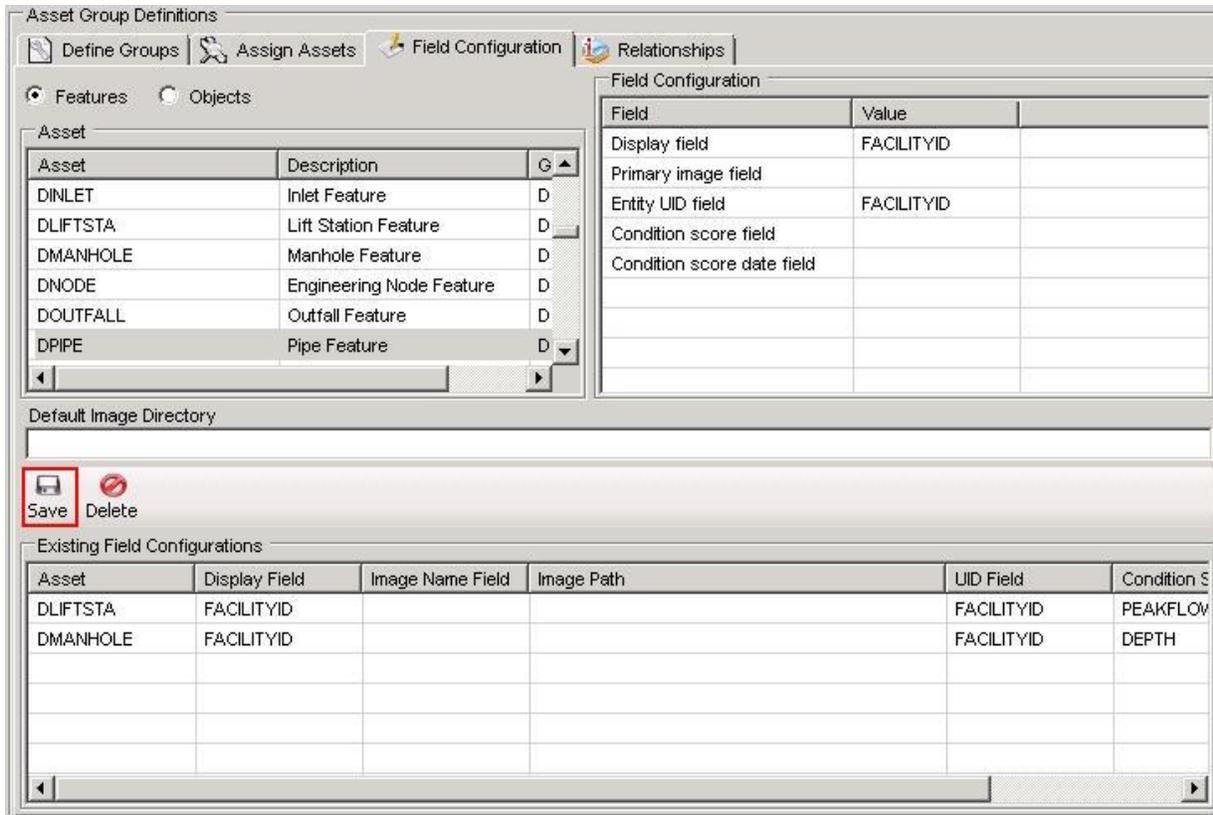


There are two ways to load asset images on the **Cityworks Asset Identify Form**. Either a file name or the entire image path needs to be stored in the geodatabase for each asset type.

When storing just the file name, use the **Field Configuration** tab to designate an image field and **Default Image Directory** location. If images are already stored on a network drive, that directory may be used. If not, set one up. Asset types may have their own network folder or all images may be located in a single folder. A single image may be used for multiple assets. The user clicks the **Add Image** button on the **Cityworks Asset Identify Form** to open the browser where the contents of the predefined folder are listed. Selecting the desired image and clicking **Open** loads the image on the form. Once loaded, the image opens when the asset is selected. This is the recommended way of storing images unless multiple images are wanted.

If storing the network file path, use the **Asset Form Configuration** in Designer to set the **ImagePath: File Path** to **Y**. Storing the entire image path allows images to be kept in any network location and multiple fields to be configured for viewing any document. However, it is not as user-friendly for the user. The user clicks in the **Attribute: Value** field to open a browser and finds the desired file which loads into the field. A **<Ctrl + click>** in the field then opens the document or image in an image viewer. It also loads the image on the **Cityworks Asset Identify Form** but it must be loaded every time the asset is selected.

1. Switch to the **Field Configuration** tab.



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2. Select the radio button option for **Features** or **Objects** to list the related fields from the geodatabase.
3. Click on the desired **Asset** from the list on the left.
4. Enter the appropriate value in the **Field Configuration** section on the right.
  - **Display field**—Select from the **Value** dropdown list.

**TIP:** Use a unique identifier such as **FacilityID** or **AssetID** for features and **AssetID** or **EquipmentID** for related objects.

- **Primary image field**—Select the attribute field you want to use for images. Note that the base file path has to be stored in [Attachment Mappings](#).
- **Entity UID field**—Set to any text field after the EntityUID Migration Tool is run. In Server AMS/PLL 2011 B2, a field named ENTITYUIDFIELD was added to the ASSETIDFIELD table. This means there is one field that has to be tracked to allow GIS data to be linked from the Cityworks database to the GIS database. Setting a sole ENTITYUIDFIELD value alleviates the dependency on ObjectID. An EntityUID Migration Tool was created to quickly set the ENTITYUIDFIELD for multiple entities at the same time. This tool is required when upgrading to Server AMS/PLL 2011 B2. The tool does not allow users to set the Entity Uid Field to a value other than AssetID, FacilityID, or EquipmentID. See KB Article 10598 for more information on the EntityUID Migration Tool.
- **Condition score field**—Select an attribute to store in the GIS database for further analysis. When this field is populated, the most recent condition score is written to the geodatabase. The user sees the latest condition score in the **Results** tab on the map page.

- **Condition score date field**—Select the type of date from the dropdown. When this field is populated, the most recent date related to the condition score is written to the geodatabase. The user sees the latest condition date in the **Results** tab on the map page.
5. Enter the filepath for the folder where attachments or images are stored in the **Default Image Directory** field. This filepath should match the one entered in the [Server attachments root directory](#) preference. For more information on attachments, see Knowledge Base # [10630 Configuring Server Attachments](#) on mycityworks.com.

**NOTE:** To specify a directory other than the **Server attachments root directory**, see [Attachment Mappings](#).

6. Click the **Save** button to save the information in the database and in the list on the lower pane.

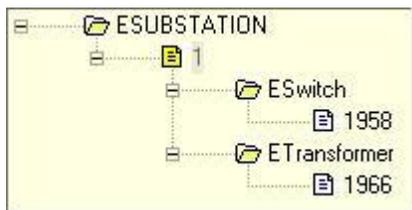
To update the asset information: Click on the asset listed on the lower pane to load the information back into the top pane, make the necessary change(s), and click the **Save** button. Click **Yes** to confirm the update when the box opens.

## Relationships Tab

The **Relationships** tab stores relevant geodatabase relationships in the Cityworks database for desired assets. These relationships allow the domain administrator to identify and include the GIS relationships that are applicable to Cityworks users. For example, annotation layers are important in mapping but not in processing work orders, so they would not be included on the **Relationships** tab.

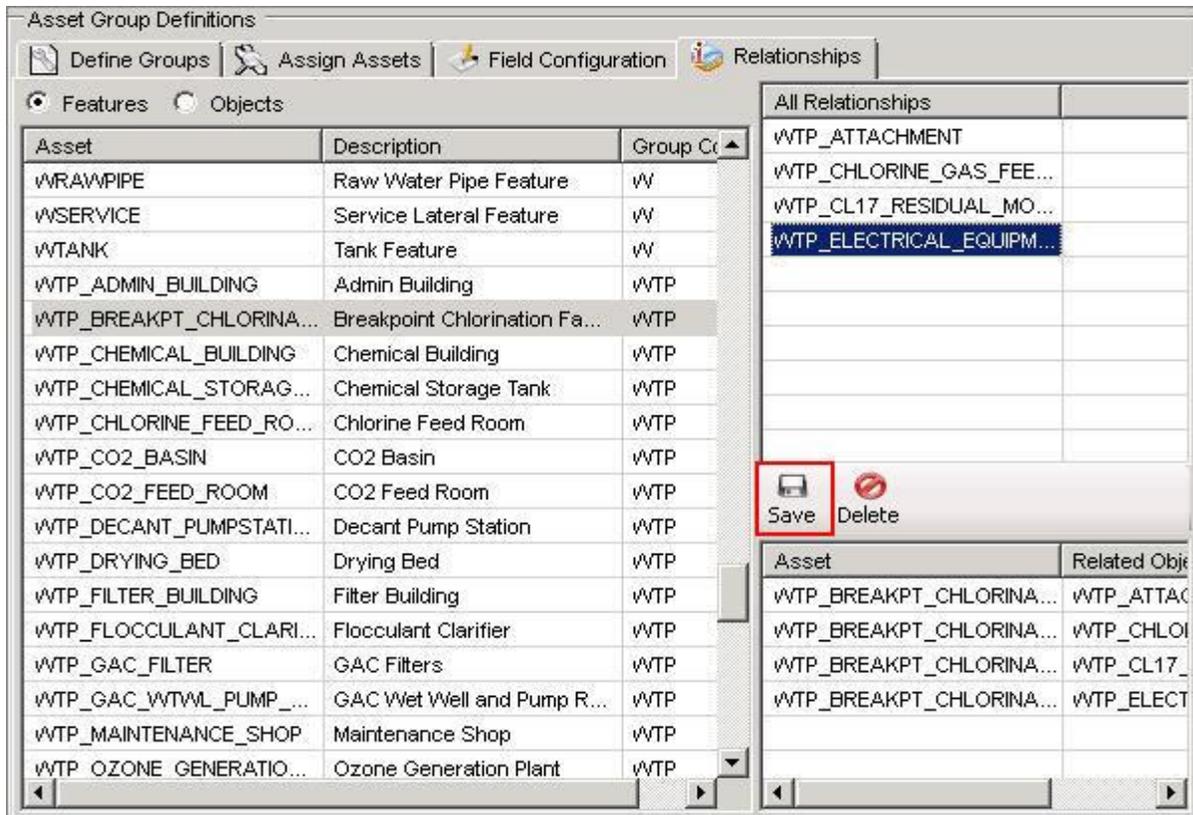
The **Cityworks Asset Identify Form** displays these relationships in the upper left corner as folders.

**NOTE:** Objects may be linked at any n-level relationship as long as the first relationship is linked to a map feature.



When the asset is selected for creating a work order, the related objects are also listed, allowing a work order to be created on the asset and/or any of its related objects.

1. Switch to the **Relationships** tab.



V201182.6

2. Select the radio button **Features** or **Objects**.

**NOTE:** *Features* are found on the map; *Objects* are linked to a map feature.

3. Select the **Asset** from the list on the left pane.

The list of relationships for the asset in the geodatabase loads on the top right pane.

4. Select the related object(s) from the **All Relationships** list for use in Cityworks.

**TIP:** *Multiple objects may be selected using <Shift + click> or <Ctrl + click>.*

5. Click the **Save** button to attach the selected object(s) to the asset in Cityworks and list them on the lower right pane.

**NOTE:** *Relationships of related objects may be removed by selecting in the list, clicking the **Delete** button, and clicking **Yes** when the confirmation box opens.*

6. Repeat these steps as needed for all relationships.

## Asset Form Configuration

Set up view and usage preferences for the **Cityworks Asset Identify Form** and the **Cityworks Inventory Editor** form listing the details about features and related objects in the geodatabase.

**NOTE:** *Both forms are shown in the section [Asset Group Definitions](#).*



- To change the default settings on the right pane, select the row and make the desired changes.  
**Back Color** is the only value that must be the same for each field so changing it in one row changes it for all of them.

**NOTE:** The form is shown with the default color settings and any changes made in the **Fore Color, Bold, or Back Color** columns are displayed as soon as the change is made.

Field Name	Fore Color	Bold	Visible	File Path	Printable	Back Color
OBJECTID	0	N	Y	N	N	-2147483624
Enabled	0	N	Y	N	N	-2147483624
AdministrativeArea	0	N	Y	N	N	-2147483624
FacilityID	0	N	Y	N	N	-2147483624
Location	0	N	Y	N	N	-2147483624
InstallDate	0	N	Y	N	N	-2147483624
OperationalArea	0	N	Y	N	N	-2147483624
LifeCycleStatus	0	N	Y	N	N	-2147483624
SubType	0	N	Y	N	N	-2147483624
WorkorderID	0	N	Y	N	N	-2147483624
LegacyID	0	N	Y	N	N	-2147483624
WarrantyDate	0	N	Y	N	N	-2147483624
RecordedLength	0	N	Y	N	N	-2147483624
InstallContractor	0	N	Y	N	N	-2147483624
FlowMeasureme...	0	N	Y	N	N	-2147483624
WaterType	0	N	Y	N	N	-2147483624
<b>Material</b>	3749350	Y	Y	N	N	-2147483624
GroundType	0	N	Y	N	N	-2147483624
ExteriorCoating	0	N	Y	N	N	-2147483624
JointType1	0	N	Y	N	N	-2147483624
JointType2	0	N	Y	N	N	-2147483624
LiningType	0	N	Y	N	N	-2147483624
PipeClass	0	N	Y	N	N	-2147483624
<b>Roughness</b>	23479	Y	Y	N	N	-2147483624
Name	0	N	Y	N	N	-2147483624
<b>Diameter</b>	11883338	Y	Y	N	N	-2147483624
<b>Depth</b>	13451997	Y	Y	N	N	-2147483624
<b>PressureRating</b>	5749557	Y	Y	N	N	-2147483624
OperatingPressure	0	N	Y	N	N	-2147483624
PressureSystem	0	N	Y	N	N	-2147483624
Condition	0	N	Y	N	N	-2147483624
ConditionDate	0	N	Y	N	N	-2147483624
PrimaryImage	0	N	Y	N	N	-2147483624

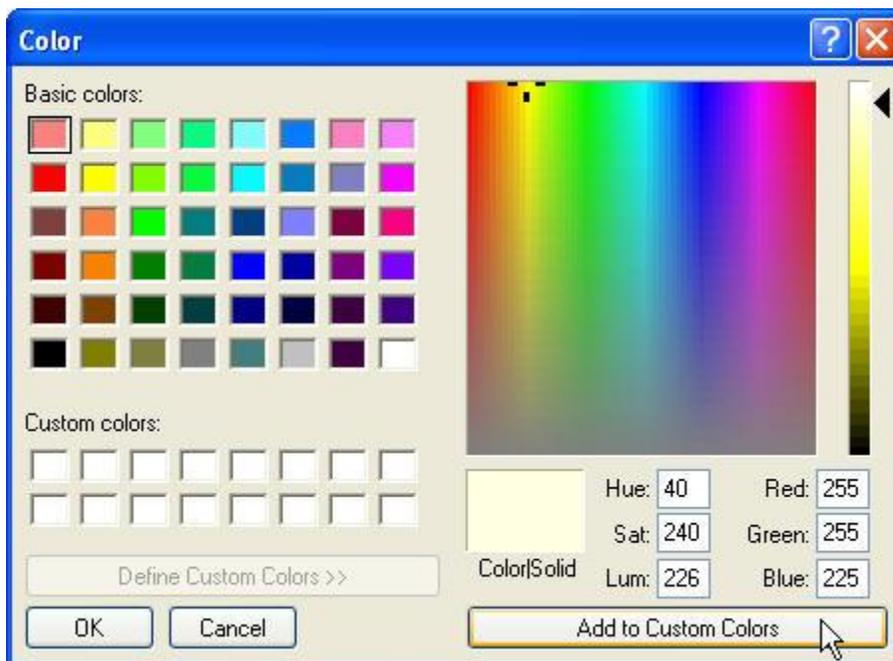
<b>Material</b>	3749350	Y
GroundType	0	N
ExteriorCoating	0	N
JointType1	0	N
JointType2	0	N
LiningType	0	N
PipeClass	0	N
<b>Roughness</b>	23479	Y
Name	0	N
<b>Diameter</b>	11883338	Y
<b>Depth</b>	13451997	Y
<b>PressureRating</b>	5749557	Y

The following changes may be made to the form:

- Hide a field—Set **Visible** to **N** by moving the cursor to the column and pressing the space bar (or double-clicking) to toggle between **Y** and **N**.
- Order of the fields on the form—Select the row and drag the field to the desired location.
- Other **Y/N** fields—Place the cursor in the column for **Bold** (text), **File Path** (for multiple attachments/images), or **Printable** (print the field values on customized work order templates) and press the space bar (or double-click) to toggle between the responses.
- Color fields—Move the cursor to **Fore Color** to change the text color or **Back Color** to change the background color and press the space bar (or double-click) to open the **Color** dialog box.

**NOTE:** *Back Color* changes the background color for the entire form.

If additional colors are wanted, click the **Define Custom Color** button to expand the box and the color selection.



- Click on the desired color and click **OK**.
5. Click the **Save** button on the left pane to save the changes.
  6. Click **Yes** when the confirmation box opens asking if the user wants to save changes for the asset type.

**TIP:** *To restore default settings, switch to another **Asset** on the left pane and click **No** when the confirmation box opens.*

When opening the **Asset Form Configuration** for an asset, if any geodatabase fields have been added to a table, they will be listed. If any fields have been deleted, a confirmation box opens listing the field(s) that have been deleted from the geodatabase. Clicking **Yes** removes the deleted field(s) from the table. Selecting **No** allows this field to display in an older version of the geodatabase; however, this message continues to open when loading the information for this asset.



## Asset Inspection Configuration

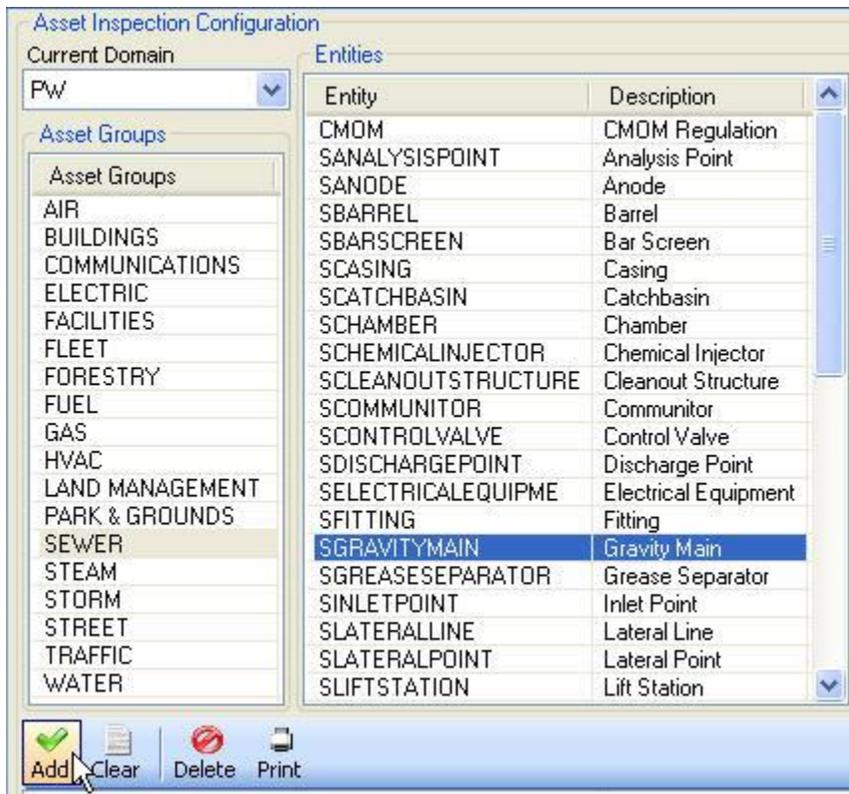
Linking inspections to asset types is done in the **Asset Inspection Configuration** window. When a work order is created on the asset type, clicking the **Inspections** button on the toolbar opens the list of inspections that may be created on that asset. The inspections are loaded into this list by associating them in this **Asset Setup** function.

All predefined Cityworks inspections are listed under the **Inspection Types** as well as one for all custom inspection templates. Link each asset type for which an inspection can be created to the applicable inspection template, including a link to all custom inspection templates that have been created. For custom inspections, select **INSP** with **Custom Inspection** as the **Description**.

Code	Description	Apply To
DINL	Inlet Inspection	Catchbasin,Inlet
DMHI	Manhole Inspection	Manhole
DSMK	Smoke Test	Conduit,Pipe,Main
DTVI	TV Inspection	Conduit,Pipe,Main
EAUTORCS	Substation Reclose Operations	Substation
EBATINSP	Battery Inspection	Substation
EMTC	Meter Changeout	Customer,Secondary Conductor
EDHINSP	Overhead Facility Inspection	Pole
ESSRELAY	Induction Overcurrent Relays	Substation
ESUBINSP	Substation Inspection	Substation
EUGINSP	Underground Facility Inspection	Underground Facility
INSP	Custom Inspection	Any Entity
PGFI	Fence Inspection	Fence

Once the assets are linked to the **Inspection Types**, selecting the inspection(s) from the right pane lists all the asset types for which the inspection(s) can be created on the lower pane.





2. Select the asset from the **Asset Groups** list to populate the entity list on the center pane.
3. Select the entity or multiple entities from the list on which to perform the inspection, using **Ctrl** or **Shift** for multiple selections.
4. Select the inspection(s) from the **Inspection Types**.

**TIP:** The **Apply To** column under **Inspection Types** lists the suggested asset type(s) for which the inspection was created for.

5. Click the **Add** button to add the information to the lower pane.

**NOTE:** Asset types can be removed by selecting them in the list on the lower pane and clicking the **Delete** button and confirming when the **Confirm** box opens.

Clicking the **Print** button opens a confirmation box asking if printing should be continued for the **Asset Inspection Definitions**. Selecting **Yes** prints the list on the user's default printer.

Asset Inspection Definitions			Printed on: 4/15/2008 2:38:22 PM
Code	Description	Apply To	
DTVI	TV Inspection	DGRAVITYMAIN	
DTVI	TV Inspection	DPRESSURIZEDMAIN	
DTVI	TV Inspection	SGRAVITYMAIN	
DTVI	TV Inspection	SPRESSURIZEDMAIN	
DTVI	TV Inspection	STORM_LINE	

## Inspection Field Mapping

The **Inspection Field Mapping** window links information fields from the geodatabase to related fields on a work order inspection or test form. Mapping the inspection fields to the desired geodatabase fields allows the corresponding values to load on the inspection form when it is opened.

1. Select the desired inspection from the **Inspections** list.

Inspection Table	Inspection Field	GDB Table	GDB Field
WHYDDEVINSP	BARREL_DIAMETER	WHYDRANT	BARRELDIAMETER
WHYDDEVINSP	MANUFACTURER	WHYDRANT	MANUFACTURER
WHYDDEVINSP	MODEL	WHYDRANT	MODEL

2. Select the first field in the **Inspection Fields**.
3. Select the group from the **Asset Group** dropdown.
4. Select the radio button option for **Features** or **Objects**.
5. Select the asset from the **Assets** list to populate the associated **Asset Fields**.
6. Select the matching field from the geodatabase **Asset Fields** with which to populate the selected field on the inspection form.
7. Click the **Save** button to list the field mappings below on the lower pane.

**NOTE:** Fields may be deleted by selecting them in the list, clicking **Delete**, and clicking **Yes** to confirm.

To change a field mapping, select the new field and click the **Save** button. Click **Yes** when the confirmation box opens for updating the field.

The list may also be printed. Click the **Print** button and click **Yes** when the confirmation box opens.

Inspection Table	Inspection Field	GDB Table	GDB Table
WHYDDEVINSP	BARREL_DIAMETER	WHYDRANT	BARRELDIAMETER
WHYDDEVINSP	MANUFACTURER	WHYDRANT	MANUFACTURER
WHYDDEVINSP	MODEL	WHYDRANT	MODEL
WHYDDEVINSP	SEAT_DIAMETER	WHYDRANT	SEATDIAMETER
WHYDDEVINSP	SUB_TYPE	WHYDRANT	SUBTYPE

## Isolation Trace Configuration

The **Isolation Trace Configuration** is for water users only. A geometric network is required to use the isolation trace function in ArcGIS for identifying valves that must be shut off to isolate a water line and list all affected customers. The setup assigns GIS feature classes and fields in those feature classes to the layers and fields listed in the **GIS Layer** column and identifies the customer account information wanted.

**IMPORTANT:** For the **Isolation Trace** feature to work properly in ArcMap, the lateral line layer must intersect with the parcel layer to populate the affected parcels.

**Isolation Trace Configuration**

Current Domain: PW

**GIS Layers**

GIS Layer	Value
Station Layer	WEnclosedStorageFacility
Valve Layer	WSystemValve
Lateral Layer	WLateralLine
Parcel Layer	Parcels
Parcel ID Field	OJBECTID
Valve Status Field	CurrentPosition
Account Number Field	ACCTNUM
Critical Customer Field (Optional)	

**Customer Setup**

Parcel Layer  
 Customer Account Table

Field Name
ACCTNUM
FIRSTNAME
MIDDLEINITIAL
LASTNAME
TITLE
CUSTADDRESS
APTNUM
CUSTCITY
CUSTZIP
HOMEPHONE
WORKPHONE
OTHERPHONE
ACCTTYPE
COMMENTS
EMAIL

Add     Delete

Field Name
CUSTADDRESS
APTNUM
CUSTCITY
CUSTZIP
HOMEPHONE
ACCTTYPE
EMAIL
ACCTNUM
FIRSTNAME
MIDDLEINITIAL
LASTNAME
TITLE

Save

1. Select the **Current Domain** from the dropdown list to load the associated **GIS Layers**.
2. Click in the **Value** box for each **GIS Layer** and enter the corresponding GIS feature class or field in the **Value** column.

**NOTE:** *Critical Customer Field* is the only optional field. All others require the name of the GIS layer or field where the information is stored.

3. Click the **Save** button.
4. Select the radio button option on the right pane for the **Customer Setup** used by the organization for customer data. The associated fields for the option selected are listed under **Field Name**.
  - **Parcel Layer**—Uses parcels in the geodatabase with a field that links to the customer account table.

**NOTE:** *The fields for Parcel Layer are not shown as they will vary.*

- **Customer Account Table**—Uses the Cityworks **CustomerAccount** table for the customer information and lists the fields shown.
5. Select each desired customer account field from the **Field Name** list, using **<Shift + click>** or **<Ctrl + click>** for multiple selections.
  6. Click the **Add** button to add the field(s) to the database and to the list on the lower right pane.

The customer information linked to the isolation trace may be modified as necessary, using the **Add** or **Delete** button. If a field is listed on the lower pane but selected again on the top pane, an error message opens when the **Add** button is clicked to alert the administrator that the field already exists.

If the radio button option is changed, a confirmation box opens to allow the user to remove the current customer field settings. Click **Yes** to delete them or **No** to retain them.

## Asset Reading

Work orders can be generated by asset readings rather than just relying on the time calculations in cyclical work orders. Readings can be obtained for individual assets and linked to work order templates to automatically generate a work order when the defined intervals, milestones, or thresholds are exceeded. Vehicle maintenance can be set up if vehicles are defined as features or related objects tied to a shop location or building. Standalone is used to record the asset readings and automatically generate the corresponding work orders.

These readings may be used for maintenance work or for emergency situations, such as when a temperature or pressure reading on a piece of machinery exceeds a certain threshold. Use **Interval** and **Milestone** for values which are constantly increasing, such as runtime hours, mileage, etc. Use **Threshold** for fluctuating values which generate a work order every time a certain threshold is exceeded.

**NOTE:** *Threshold* could be used to define the mileage when a vehicle is retired but generally fields which are used for **Interval** and **Milestone** are not used for **Threshold**.

Asset readings are set up in Designer. First, the assets must be defined in the geodatabase as either features or objects and corresponding work order templates created for them. A numeric reading field must also exist or be set up for the asset in the geodatabase table, such as mileage, runtime hours, temperature, pressure, etc.

**NOTE:** An asset may have multiple reading fields if different readings are to be tracked.



## Actions Tab

The **Actions** tab is used to link the unique identifier(s) in an asset type with numeric values for the reading field and the corresponding work orders.

**Asset Reading**  
Current Domain: PW

**Assets**  
Asset Group: WATER  
Feature Classes (selected)  
Object Classes

Asset	Description
WMETERSTATION	Meter Station
WPRESSURIZEDMAIN	Pressurized w/
WPRODUCTIONWELL	Production W/
WPUMP	Pump
WPUMPSTATION	Pump Station
WSCADASENSOR	Scada Sensor

**Reading Action**  
 Interval  Threshold  
 Value: 4272 Field: RUNTIMEHOURS  
 Work Order Template: Clean Air Strainer  
 Description: Maintenance schedule for runtime hours of 6 mont

Save Delete Clear

**Defined Reading Actions**

Action ID	Action Type	Asset	Asset ID	Reading Name
22	Threshold	WPUMP	7	TEMPERATUR
16	Interval	WPUMP	8	RUNTIMEHOL
21	Interval	WPUMP	8	RUNTIMEHOL
14	Threshold	WPUMP	8	TEMPERATUR

**Milestone**  
 Value: 85440 Work Order Template: Replace Pump

Add Remove Clear

ID	Milestone	WO Template
50	8544	Lubricate Bearings
51	42720	Clean Inspection Port

1. Select the **Asset Group** from the dropdown list.
2. Select the radio button option for **Feature Classes** or **Object Classes** to list the desired asset type.
3. Select the asset from the **Asset** list on the left to load the lower left pane with the associated **FacilityID**, **EquipmentID**, or **AssetID**.

**NOTE:** The header of the lower left pane changes to indicate what the display field is for the selected asset. If nothing lists in the **Value** column, verify that the asset groups have been assigned and the display field selected under **Asset Group Definitions**. The **Display Field** should be the unique identifier in Cityworks for the asset, such as the **FacilityID**, **EquipmentID**, or **AssetID**.

4. Select the desired ID(s) from the **Value** list.

**TIP:** Multiple reading actions for interval or threshold can be set at the same time if the same information applies to each asset.

5. Select the **Reading Action**: either **Interval** or **Threshold**.

**NOTE:** Use **Interval** for readings that continually increase, such as total mileage in a vehicle. Select **Threshold** for emergency situations when an asset reading exceeds a certain temperature or pressure and work orders will be created every time the reading is above the **Threshold** value. Selecting **Threshold** inactivates the **Milestone** portion of the pane as only one reading **Value** may be assigned per asset per reading **Field** for **Threshold**.

Reading Action

Interval  Threshold

Value: 120      Field: TEMPERATURE

Work Order Template: Inspection

Description: Check to see why temperature is above 120.

Save Delete Clear

Defined Reading Actions

Action ID	Action Type	Asset	Asset ID	Reading Name
13	Threshold	WPUMP	7	TEMPERATUR

Milestone

Value:      Work Order Template:

Add Remove Clear

ID	Milestone	WO Template
----	-----------	-------------

6. Enter the **Value** and select the corresponding reading **Field** from the dropdown list, which lists the fields for the selected asset.

**NOTE:** *Interval, Threshold, and Milestone are numeric fields and their length depends on the field type set up in the geodatabase table.*

7. Select the corresponding **Work Order Template** from the dropdown for the numeric value entered for **Interval** or **Threshold**.

**NOTE:** *The **Work Order Template** dropdown is populated with work orders which have been set up for the selected feature or object.*

8. Enter the **Description**, which may also apply to any related milestones.

**NOTE:** *The **Comments** field holds up to 250 characters and displays approximately 40 characters at a time.*

9. Click the **Save** button to save the asset readings for the selected asset(s).
10. Optional for **Interval**: Click on the desired asset from the list on the lower right pane to reload the information back into the fields.

**NOTE:** *Milestones must be added one at a time for each asset in the list as they are linked to the **Interval**.*

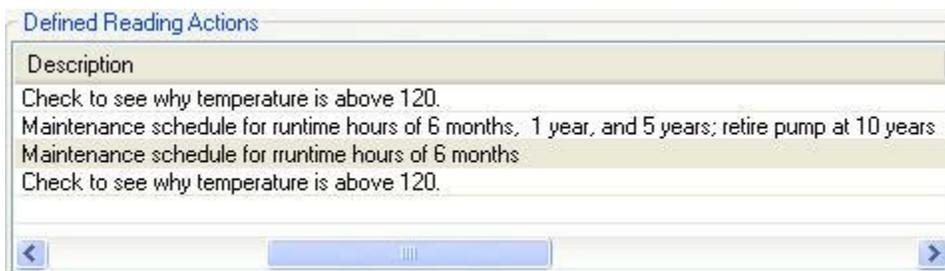
A **Milestone** may be added for an **Interval** by typing in the **Value** for the same reading **Field** as the **Interval**, selecting the corresponding **Work Order Template**, and clicking the **Add** button to save the milestone in the list. Do this for each **Milestone**.

**NOTE:** *More than one **Milestone** may be added for the asset. If the **Milestone** is a multiple of the **Interval** or another **Milestone**, only one work order is created. The **MilestoneID** is generated when the information is saved.*

11. Click the **Save** button to save the milestones with the **Interval**.
12. Repeat as needed to add **Milestones** to another asset ID, additional reading actions for the same asset using a different reading field, or to add readings for other assets.

Current asset readings may be viewed by selecting the **Asset, Value, and Reading Field**. Changes may be entered and new information saved by clicking the **Save** button. Click **Yes** to confirm the update when the message box opens.

Scroll across to view **Comments** or any of the other listed fields.



Selecting milestones and clicking the **Remove** button opens a confirmation box. Click **Yes** to delete the selected milestones.

No confirmation box opens when deleting from the **Defined Reading Actions** list. All selected readings are removed when the **Delete** button is clicked.

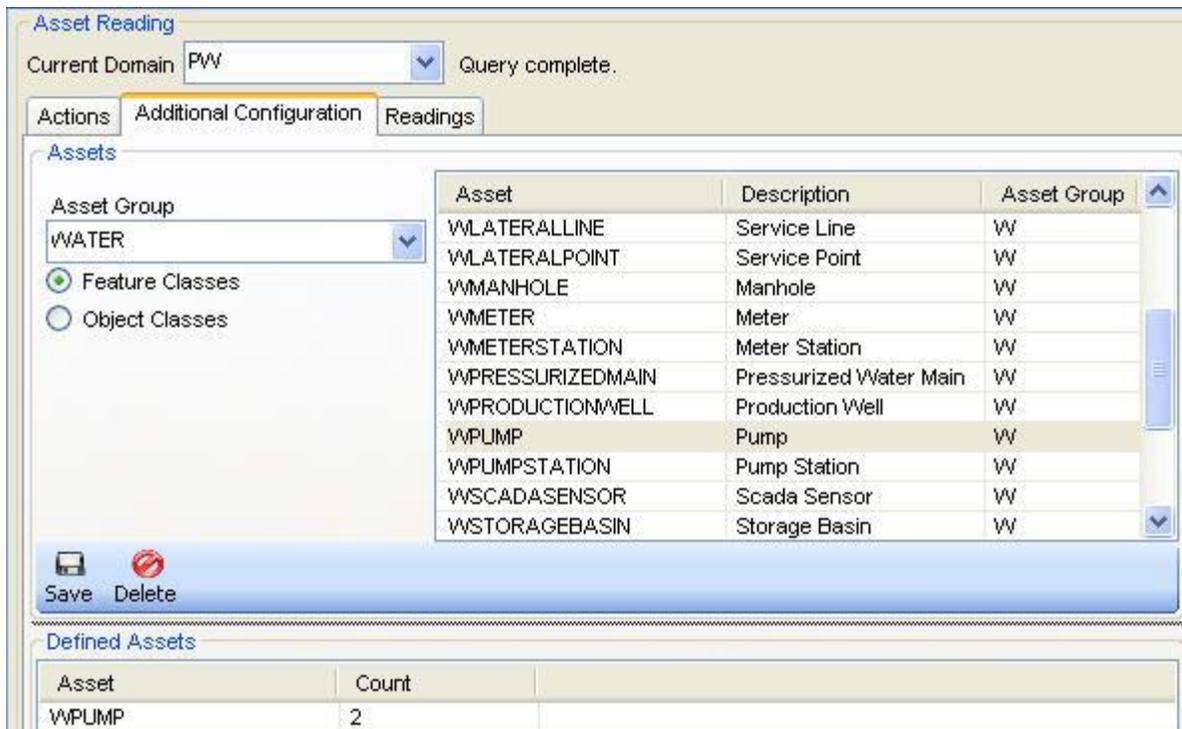
## Additional Configuration Tab

The **Additional Configuration** tab is used to load the object-feature relationship and fields required by Cityworks from the geodatabase table into a Cityworks table, **CWAsset**, so the asset information is accessible without a connection to the geodatabase. Asset readings are entered in Cityworks Standalone. The information in this table is used to generate work orders associated with each asset reading. If changes are made in the geodatabase that affect these table values, this information will need to be updated.

**NOTE:** The Cityworks **CWAsset** table contains these fields: **AssetClass**, **AssetID**, **AssetObjectID**, **FeatureClass**, **FeatureAssetID**, **FeatureObjectID**, **LegacyID**, **Location**, **WarrantyDate**, **X**, and **Y**.

Skip this tab if using a SCADA (Supervisory Control and Data Acquisition) or other automated system to input asset readings through an interface that sends the information through the .dll (dynamic link library) into Cityworks, as no additional configuration is required.

1. Switch to the **Additional Configuration** tab.



2. Select the **Asset Group**.
3. Select the radio button option for **Feature Classes** or **Object Classes**.
4. Select the desired feature or object class(es) from the list, using the **Shift** or **Ctrl** key for multiple selections.
5. Click the **Save** button and wait while the information is copied. Progress is tracked in the space at the top to the right of the **Current Domain** by listing the number of records completed out of how many and when it's complete.

**NOTE:** If there are no assets in the selected feature or object class, the progress bar flashes but the asset group is not listed as there was nothing in the geodatabase to copy over.

Query complete for 502 of WPRESSURIZEDMAIN 5274 record(s).

Once copied into Cityworks, the asset is listed on the lower pane under **Defined Assets** with the number of records.

Defined Assets	
Asset	Count
WHYDRANT	1359
WPRESSURIZEDMAIN	5086
WPUMP	2

6. Repeat the steps when needed to update the table information in Cityworks by selecting the table from the list, clicking the **Delete** button, and clicking **Yes** when the confirmation box opens to remove the table.

## Readings Tab

The **Readings** tab provides a way to delete incorrect asset readings. It lists all the readings for the selected asset.

***IMPORTANT:*** If an incorrect reading generated a work order, it must be deleted before adding a new reading for the correct reading to generate a work order.

1. Switch to the **Readings** tab.

Asset Class	Asset Id	Reading Name	Reading Date	Reading
FVEHICLE	1	MILEAGE	3/3/2008 10:14:21 AM	2972.00
FVEHICLE	1	MILEAGE	4/16/2008 10:10:17 AM	3342.00
FVEHICLE	1	MILEAGE	4/16/2008 4:54:35 PM	3432.00

2. Select the **Asset Group** from the dropdown.
3. Select the radio button for **Feature Classes** or **Object Classes** to populate the ID list below.
4. Select the **Asset ID** from the list to populate the **Readings** pane on the right.

5. Select the incorrect reading(s) and click the **Delete** button.

**TIP:** Make a note of the work order ID when deleting a reading associated to a work order. Then go into Cityworks and cancel the work order.

6. Click **Yes** when the confirmation box opens to delete the selected reading(s).

When the new reading is saved in Standalone, a work order will be generated if the reading warrants creating one.

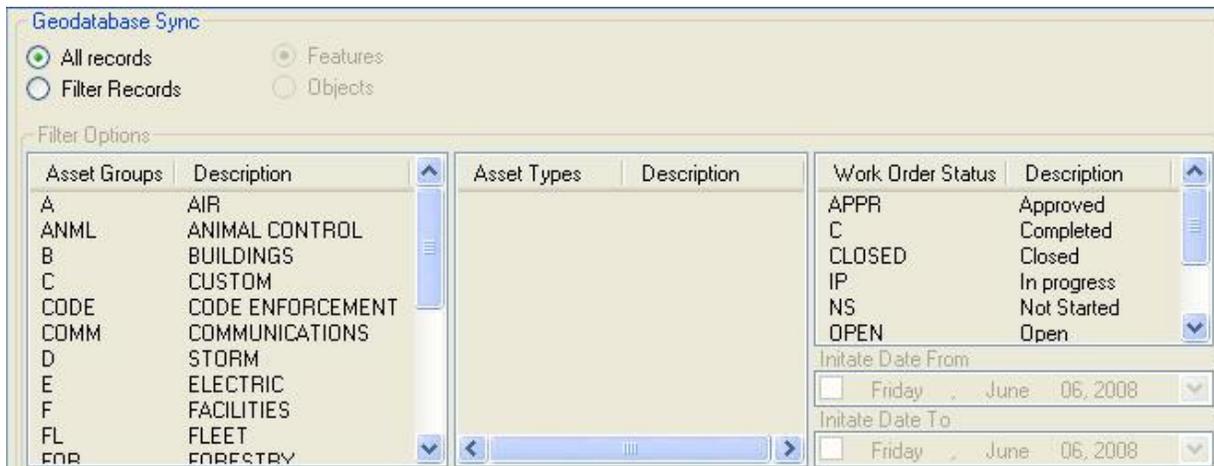
ReadingDate	Reading	Comments	W.O.Id	W.O.Reading	I/M
4/16/2008 5:02:56 PM	3432.0000	Correction to earlier entry.	4983	3432	Interval
3/3/2008 10:14:21 AM	2972.0000				

## Geodatabase Sync

The **Geodatabase Sync** function verifies that the Object IDs in the geodatabase and Cityworks database match and allows non-matching entries to be updated in the Cityworks **WorkOrderEntity** table. Run the tool when updating a personal geodatabase to SDE because SDE rennumbers all the objects when they load into the SDE. Other changes to the GIS, such as splitting a line, may also require synchronization of object ID values in the work order history.

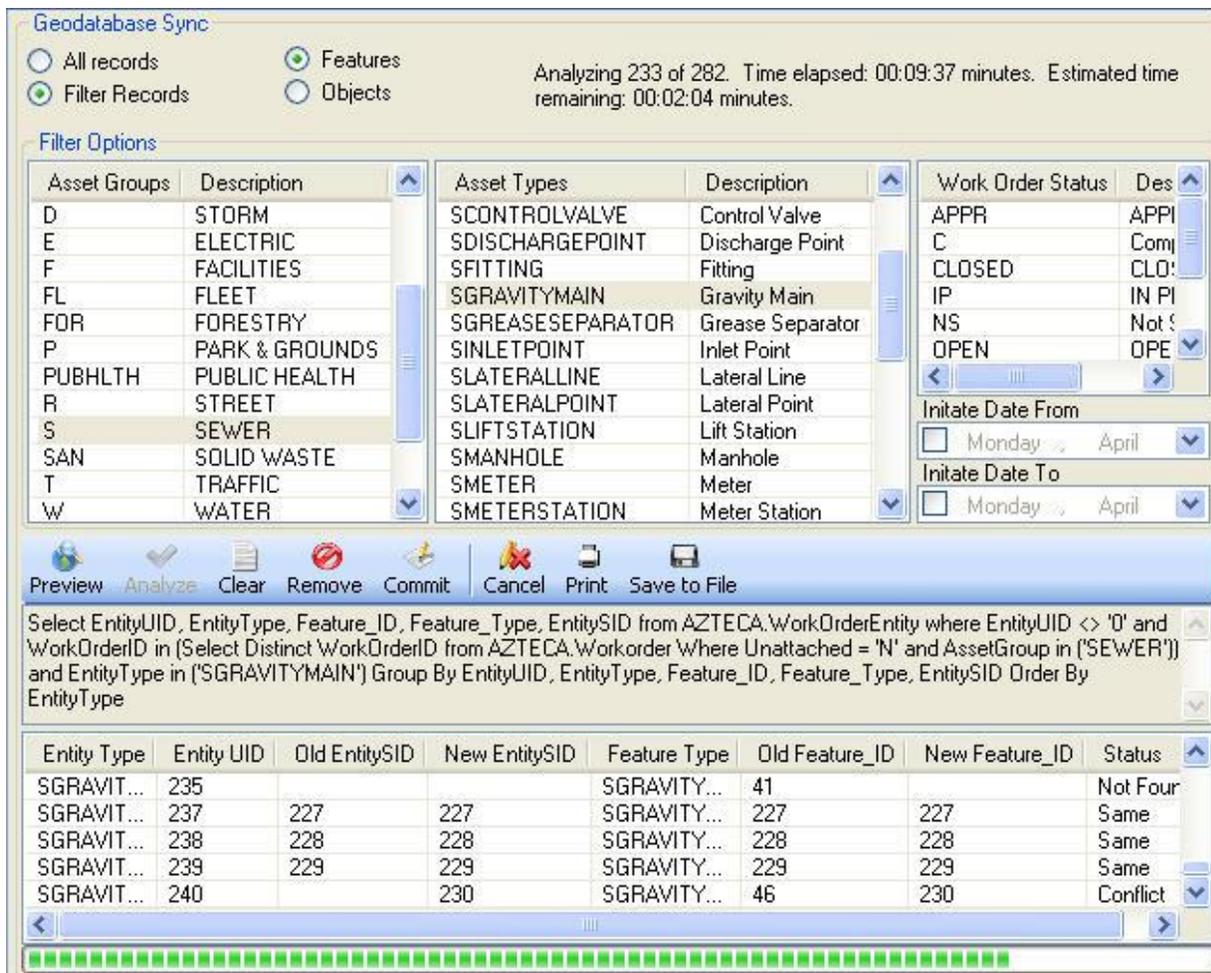
**IMPORTANT:** Before beginning these steps, make a backup of the Cityworks database.

1. Select the radio button option for the records to check:
  - **All Records**—Checks all records for all features and objects in the database.



- **Filter Records**—Activates the top pane to allow the records check to be filtered by features/objects, asset groups/types, work order status, and/or dates.

**NOTE:** Verifying all records may take a considerable amount of time. No other Designer functions may be accessed while this analysis is running.



- For **Filter Records**: Select the **Filter Options** desired from the top pane.

**NOTE:** The SQL query reflects the options selected and is listed in the gray area below the buttons on the top pane.

- Select the radio button option for **Features** or **Objects**.

**NOTE:** The **EntitySID** columns list either the feature or object IDs and the **Feature\_ID** columns list the information for the feature. Therefore, their values are the same when the **Features** option is selected.

- Select from the **Asset Groups** list. Only one asset group may be selected at a time.
- To further narrow the search, select the specific asset type(s) from the **Asset Types** list. Multiple asset types may be selected using <Shift + click> or <Ctrl + click>.
- If desired, select the **Work Order Status** for the records in the Cityworks **WorkOrder** table. Multiple status selections may be made.

**NOTE:** The Cityworks **WorkOrder** table is linked to the **WorkOrderEntity** table through the **WorkOrderID** and lists only the entities found on work orders with the selected status.

Work Order Status	Description
APPR	APPROVED
C	Completed
CLOSED	CLOSED
IP	IN PROGRESS
NS	Not Started
OPEN	OPEN
PEND	PENDING
UNK	Unknown

Initiate Date From  
 Tuesday , April 01, 2008

Initiate Date To  
 Monday , April 21, 2008

7. Select either or both an **Initiate Date From** or **Initiate Date To** for the work orders.

**NOTE:** Selecting a date automatically checks the box for **Initiate Date From** or **Initiate Date To** for specifying a date range.

8. Click the **Analyze** button to start the search. The progress information is listed to the right of the radio button options with the number of assets to be analyzed, the time elapsed, and time remaining. This information updates each time an asset is analyzed. The progress bar at the bottom provides a visual indication of the progress.

A message box opens if no entities fit the search criteria.

Analyzing may take some time so, if necessary, the user may cancel the analysis by clicking the **Cancel** button. The records already analyzed remain in the list and the progress status will change to **Analysis cancelled**.

**NOTE:** The software finishes analyzing the current asset before cancelling the analysis so there is a lag in response time.

When complete, the number of assets which require updating are listed with the time it took to run the analysis. All the assets which have been analyzed are listed in the lower pane under the SQL query. The **Old EntitySID** column lists the ID from the Cityworks database. The **New EntitySID** is the ID from the geodatabase.

**NOTE:** If the entity is a feature, both the **Entity Type** and **Feature Type** columns will be the same. Related objects are listed in the **Entity Type** with the feature to which they are related in the **Feature Type** column.

Analysis complete. 10 asset(s) need to be updated. Time elapsed: 2.99 minutes.

The **Status** listed in the last column consists of these options.

- **Same—Old** and **New EntitySID** and **Feature\_ID** match.
- **Conflict**—The **EntitySIDs** do not match.

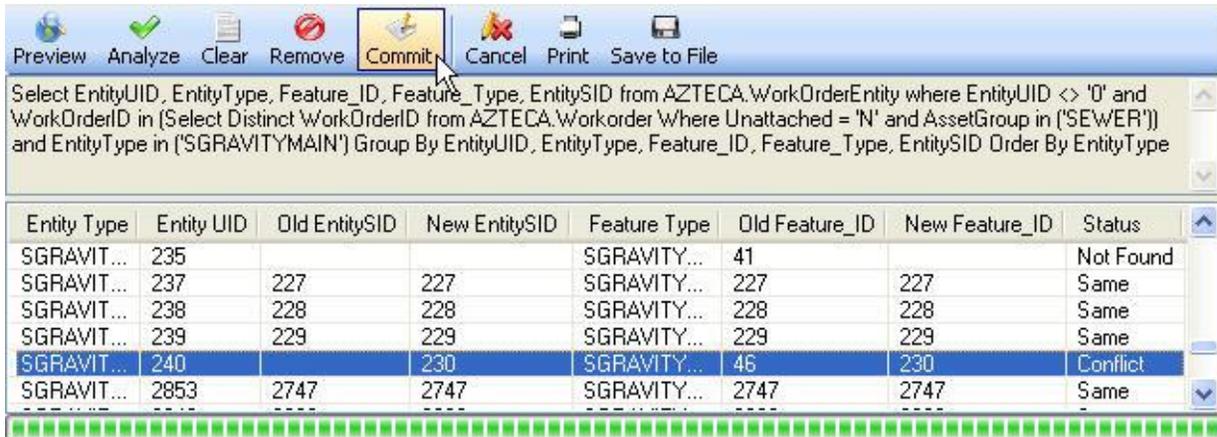
**NOTE:** The assets listed for updating are the total number of records listed with a **Conflict** status.

- **Not Found**—No entry found for the selected **Entity UID** (feature or object) listed. If no records are found, this information box opens.

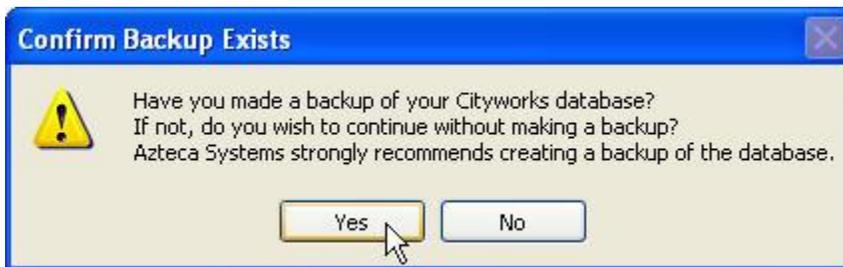
9. If assets need updating, these options are available.

- To automatically synchronize the IDs, click the **Commit** button.

**NOTE:** If any assets are selected, only those selected will be updated. If no assets are selected, all assets requiring updating will be changed.



When clicking the **Commit** button, two confirmation boxes open before the changes are made. The first one asks the administrator to confirm that a backup of the Cityworks database exists. Click **Yes** on the **Confirm Backup Exists** message when the backup is done.



The second box asks if the selected conflict analysis results should be committed to the Cityworks database. Click **Yes** when the **Confirm Sync** message box opens to continue with the synchronization.

When the changes are completed, the **Conflict** status changes to **Updated**.

SGRAVIT...	240		230	SGRAVITY...	46	230	Updated
------------	-----	--	-----	-------------	----	-----	---------

If an error occurs, the **Status** column returns with **Failed**. Check to see if the database connection has been lost; if so, re-establish it and try again. If not, make the change manually.

- To manually change the information in the Cityworks database, click the **Print** button to print the list or the **Save to File** button to save the list as a file. First, use the **Remove** button to remove any records not needed for printing or saving and click **Yes** when the confirmation box opens.
  - Print**—Click the **Print** button to print the geodatabase sync results. When the confirmation box opens, click **Yes** to print the list to the administrator's default printer.

Depending on the length of the list, it may take some time to format the information for printing. A second confirmation box may open to estimate the number of pages the list is and asking if the user wants to continue.

Geodatabase Sync Results Printed on: 4/21/2008 10:46:03 AM

Entity Type	Entity UID	Old EntitySID	New EntitySID	Feature Type	Old Feature_ID	New Feature_ID	Status
SGRAVITYMAIN	235			SGRAVITYMAIN	41		Not Found
SGRAVITYMAIN	237	227	227	SGRAVITYMAIN	227	227	Same
SGRAVITYMAIN	238	228	228	SGRAVITYMAIN	228	228	Same
SGRAVITYMAIN	239	229	229	SGRAVITYMAIN	229	229	Same
SGRAVITYMAIN	240		230	SGRAVITYMAIN	46	230	Conflict
SGRAVITYMAIN	2853	2747	2747	SGRAVITYMAIN	2747	2747	Same

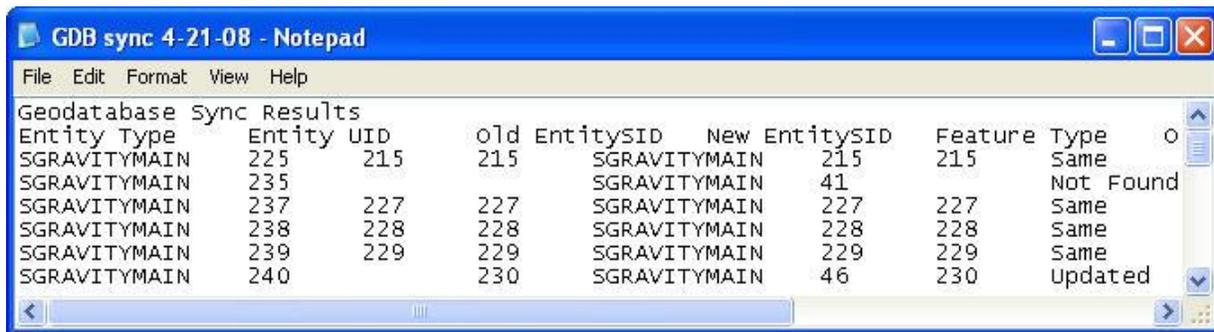
- **Save to File**—Click the **Save to File** button to open the **Geodatabase Sync Results** box. Navigate to the desired file location, name the file, and click the **Save** button.

Click **Yes** when the message box opens stating the file doesn't exist and asking if the user wants to create it.

A message returns to inform the administrator that the text file was saved and lists its location. Click **OK** to close the message.

If saving an existing file, click **Yes** when the message box opens to replace the file. If a new file is wanted, click **No** and save it with a different name. The same **Save** message opens to confirm that the file has been saved.

The information is saved as a .txt file in **Notepad**.



# Storerroom

The **Storerroom** group is for users of the Cityworks Storerroom add-on only and functions similar to domain administration. Storerroom domains are created and groups are defined to designate which employees have permission to issue, receive, transfer, and audit materials for each storerroom. Currently this is the only function in the **Storerroom** group.

The **Storerroom** function only displays when the administrator logs in as the Storerroom domain administrator. Superuser logins cannot access **Storerroom**.

**NOTE:** *If logged in as the superuser, click the **Login** button on the toolbar and log in with a Storerroom domain administrator login for the desired domain.*

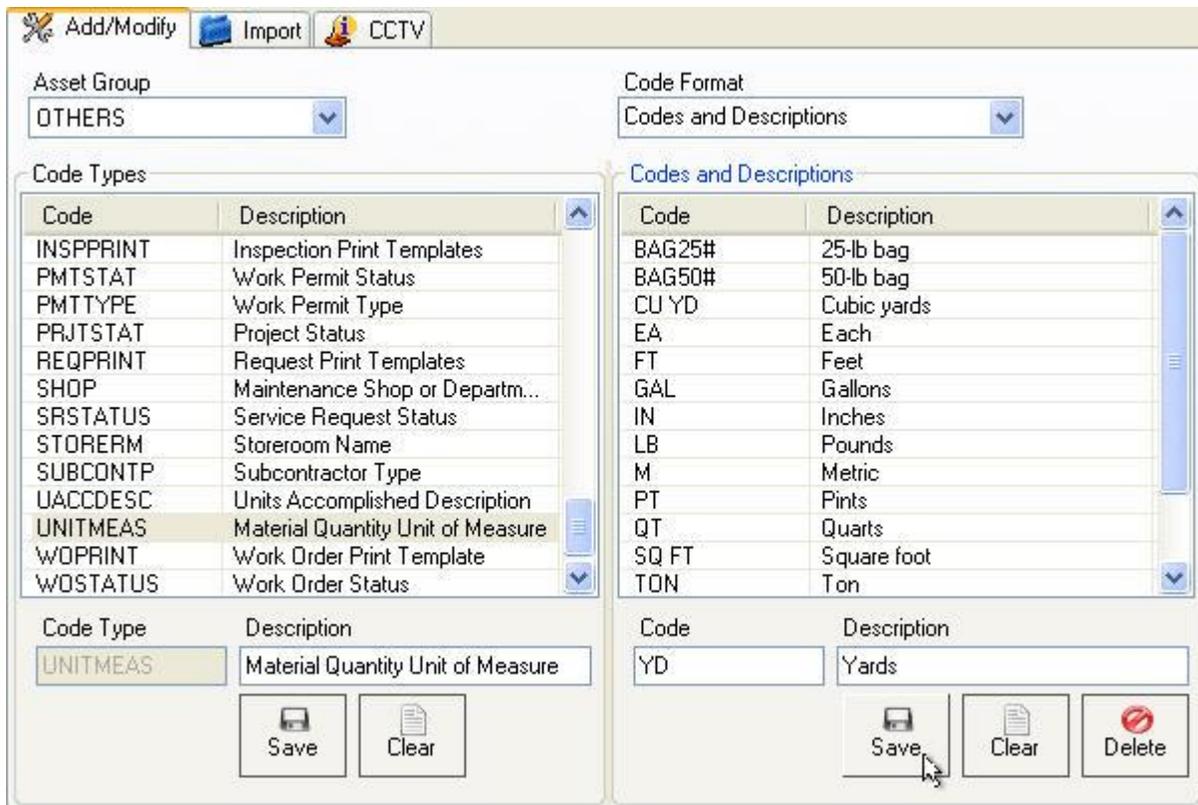
There is one function under Storerroom:

- **Storerroom Domain Groups**—Sets up the Storerroom domain groups with the employees and assigns permission for Storerroom transactions.

The only other setup required to use the Storerroom add-on is to populate the **Codes and Descriptions** boxes. This can be done in Designer under **Others > Codes** by selecting **Others** as the **Asset Group** and populating the following **Code Types / Description**:

- **ACCOUNT / Storerroom Accounts**
- **AUDITINT / Material Audit Interval**
- **STORERM / Storerroom Names**
- **UNITMEAS / Material Quantity Unit of Measure**

**NOTE:** *Codes and Descriptions may also be populated directly from Storerroom by using the recessed button function when one of these **Codes and Descriptions** boxes open.*

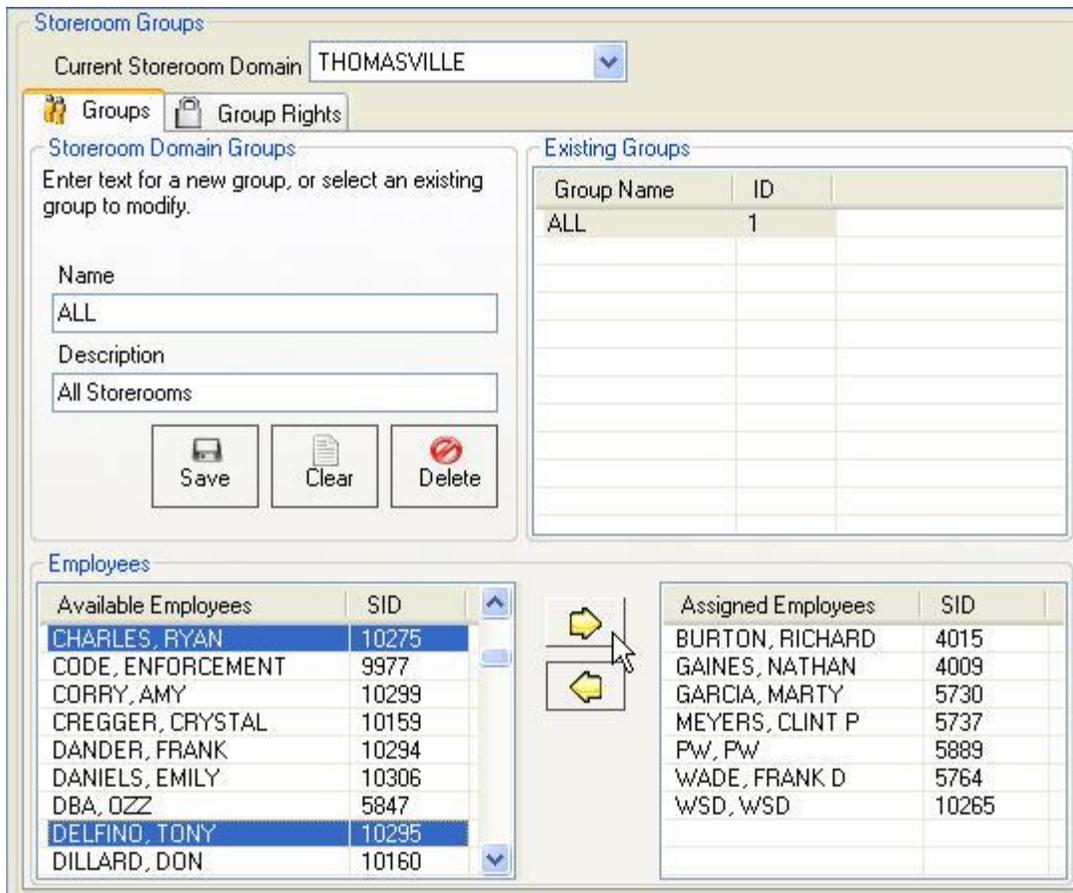


## Storeroom Domain Groups

The **Storeroom Domain Groups** function defines the Storeroom groups, places the employees into those groups, and assigns permission for groups to audit, issue, receive, and transfer materials in Storeroom.

### Groups Tab

Storeroom groups are defined by domain. The **Groups** tab allows the domain administrator to set up Storeroom groups and assign employees to the group.



1. Type in the **Name**, up to 50 characters long, and associated **Description**, up to 160 characters long.
2. Click the **Save** button to list the **Group Name** on the upper right pane.
3. Select the employees from the list of **Available Employees** on the lower left pane and click the right arrow button to place them in the **Assigned Employees** list on the right.

**TIP:** Use <Ctrl + click> or <Shift + click> to make multiple selections or double-click on the desired employee to move them one at a time.

4. Click the **Clear** button to clear the fields to add another group.

Modifications may be made to any group by double-clicking on the group in the **Existing Groups** list to load the information on the tab. Employees may be moved in or out of a group, using the right or left arrow buttons or by double-clicking on the name.

**NOTE:** An employee is listed in one list or the other but not both.

## Group Rights Tab

The **Group Rights** tab assigns Storeroom groups permission to perform storeroom transactions. Once the information has been entered, it can be viewed in the list on the lower pane by selecting any or all of the

groups and storerooms. Update any of the information by following the steps below to replace the current listing.

1. Select the **Group Name** on the upper left pane.

**NOTE:** Multiple groups can be selected at the same time if they need the same Storeroom permissions.

Group Name	ID
ALL	1

Storerooms	
DT1	
ESIDE	
ET1	
MAIN	
PT1	
PwMAIN	
RT1	
ST1	
TT1	
WT1	

Group Name	Storeroom	Audit	Issue	Receive	Transfer	Group ID
ALL	DT1	1	1	1	1	1
ALL	ESIDE	1	1	1	1	1
ALL	ET1	1	1	1	1	1
ALL	MAIN	1	1	1	1	1
ALL	PT1	1	1	1	1	1
ALL	PwMAIN	1	1	1	1	1
ALL	RT1	1	1	1	1	1
ALL	ST1	1	1	1	1	1
ALL	TT1	1	1	1	1	1
ALL	WT1	1	1	1	1	1

2. Select the storeroom location(s) from the **Storerooms** list in the center pane where the selected storeroom group needs user privileges.

3. Check the applicable boxes for the **Group Security Rights**:

- **Audit**—Permission to adjust Storeroom quantities when performing audits to reflect the actual stock on hand or change material unit costs.
- **Issue**—Permission to distribute or release materials to work orders, employees, or accounts.
- **Receive**—Permission to add materials to the Storeroom received from suppliers, accounts, or work orders.
- **Transfer**—Permission to move materials from one storeroom to another.

**TIP:** If a person has **Issue** rights, **Receive** rights should also be granted so unused materials can be received back into the storeroom.

4. Click the **Add** button to add the selected permission rights to the database and list them on the lower pane.

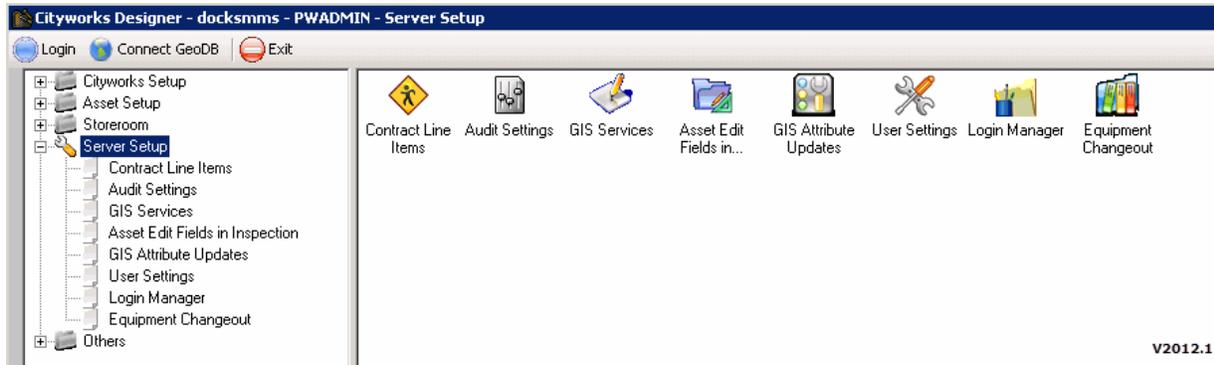
5. Add the permissions for each group by repeating these steps.

**NOTE:** *The lower pane lists only the information for the selected group.*

# Server Setup

**Server Setup** consists of these additional functions needed to complete the configuration for Cityworks Server. The **Server Setup** option is only displayed when the selected Cityworks database contains valid Server tables and the existing Server application. See [Cityworks Database Manager](#) for specific instructions if **Server Setup** is not listed for the login.

**NOTE:** The database list in the Cityworks login dropdown selection is populated with the database at the time an ODBC connection is set up.



The following functions are available under **Server Setup**.

- **Contract Line Items**—Set up a tree structure for defining the items available on contracts.
- **Audit Settings**—Select the fields to track in the **Audit Log** for requests, work order, inspections, contracts, and/or projects.
- **GIS Services**—Points Cityworks Server applications to the server where the map documents are stored as well as designating which geolocating service to use. Specific maps can be created and customized for a domain, user groups, or employees.
- **Asset Edit Fields in Inspection**—Allows the Cityworks domain administrator to select the asset fields that are editable on Cityworks Server AMS inspections and saved directly to the geodatabase.
- **GIS Attribute Updates**—Allows the Cityworks domain administrator to select the asset fields in the geodatabase to be updated when a work order is closed with a work order field or custom value.
- **User Settings**—Allows the Cityworks domain administrator to define a custom layout folder for a domain, group, or specific user.
- **Login Manager**—Allows the administrator to designate the users who have access to AMS, PLL, Contract, and API as well as keep track of the logins being used.
- **Equipment Changeout**—Allows the domain administrator to customize labels on the Changeout forms.

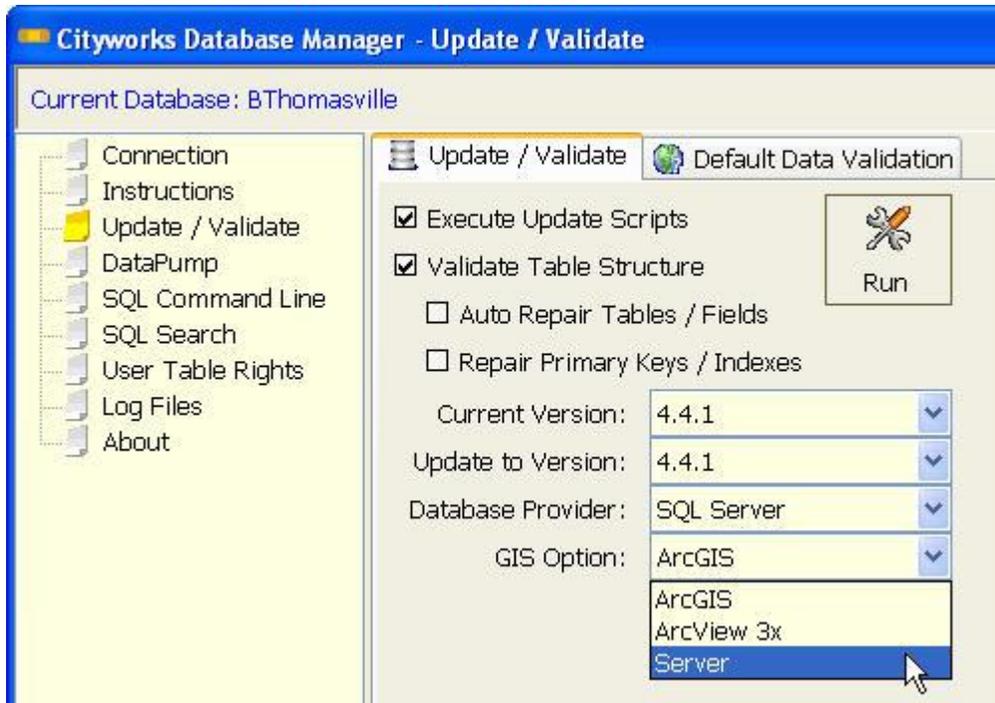
## Cityworks Database Manager

Before these Designer settings are available, the Cityworks database must contain valid Server tables, which can be done using Cityworks Database Manager. If generating a new database, first generate a Cityworks

Desktop database using the **GIS Option** for **ArcGIS**. Then follow the steps below. To migrate to a database, set up and import the data from an Access personal database first and verify that the fields have mapped correctly to the Cityworks database.

**IMPORTANT:** Confirm and reset user/role permission for **CWWebUser**, which are the stored procedure scripts that grant proper permission to access the database, before running Cityworks Database Manager.

1. Open **Cityworks Database Manager** from the **Start** menu > **All Programs** > **Cityworks** > **Database Manager**.
2. Check **Execute Update Scripts** and **Validate Table Structure**.



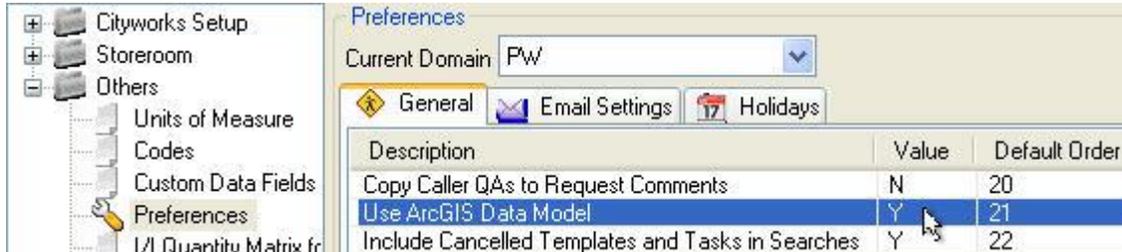
3. If running a version update, select the **Update to Version** from the dropdown.
4. For the **GIS Option**, select **Server** from the dropdown.
5. Click the **Run** button to perform the selected operations and wait a few minutes until the process is complete. The **Actions Performed During Session** are listed on the right along with the time it took to run. The **Last Update** lists in red on the bottom of the center pane and indicates if the Cityworks database is Server-compatible.

Actions Performed During Session
1055590047.14 minutes to complete query.

Last Update: UPDATE136, Server Compatibility 01-16-2008

## Additional Server Configuration

When Designer is first opened as a Cityworks domain administration, navigate to **Others > Preferences** and click **Save**. By default, the **Use ArcGIS Data Model (#21)** value is set to **Y**, which is the preference needed to use the Cityworks Server.



Additional tabs and fields for setting up Cityworks Server AMS functionality can be found in multiple locations in Designer. See the corresponding sections for details on these functions.

Under **Cityworks Setup**:

### Request Templates

- If the organization is utilizing a public website to generate citizen requests, change the **For Public Website** setting to **Y (True)** for all request types that should be included on the site using the **General info** tab. If adding in a single template or a new template, use the **General** tab on the **Request Template Edit** window.
- Use the **WO Templates** tab to associate multiple work order types to the request template, such as a water leak to inspect, repair, or flush main activity for creating a work order from a request.

**NOTE:** Because Cityworks Server AMS is a one-to-many relationship (1:m), rather than the 1:1 relationship found in Cityworks Desktop, multiple work order types may be associated to a single request as well as multiple inspections assigned to a single work order.

### **Work Order Templates**

- On the [Inspections tab](#), set custom inspection(s) to automatically be created when the work order is created and set up cycles for custom inspections.

### Contractors

- On the **Contractor Edit** form, changing the last field in the **Information** pane to **No for Visible in Server** removes a contractor from the current contractor selection lists in Server.

### Equipment

- On the **Equipment Edit** form, unchecking the **Viewable in Server** box removes the equipment item from the current selection lists in Server.

### **Materials**

- On the [Material Edit](#) form, unchecking the **Viewable in Server** box removes the material from the current selection lists in Server.

### **Custom Inspection Templates**

- Use the **Server Panel Configuration** tab to designate required observations that users must populate before an inspection can be closed and to configure the inspection panels by adding subheadings and grouping the observations.

### [Employee Relates](#)

- Set up the base-level security for what a user can do in **Employee Relates**.

**NOTE:** Access for which Server pages a user can access and view is granted through web security rules.

### Work Order Template Classes

- Use the [Classes tab](#) to set up parameters for the software to create different work order templates based on various characteristics of an asset, such as size, location, etc.
- Use the [Rule Sets tab](#) to link the work order template to specific values for the fields selected on the **Classes** tab. When the asset is selected, Cityworks checks the parameters and selects the appropriate work order template.
- Optional: Use the [Load tab](#) to load this information from a text delimited file.

Under **Others**:

#### Preferences

- Populate the Server options, on the **General** tab.

**NOTE:** See the section [Preferences](#) for information about these options.

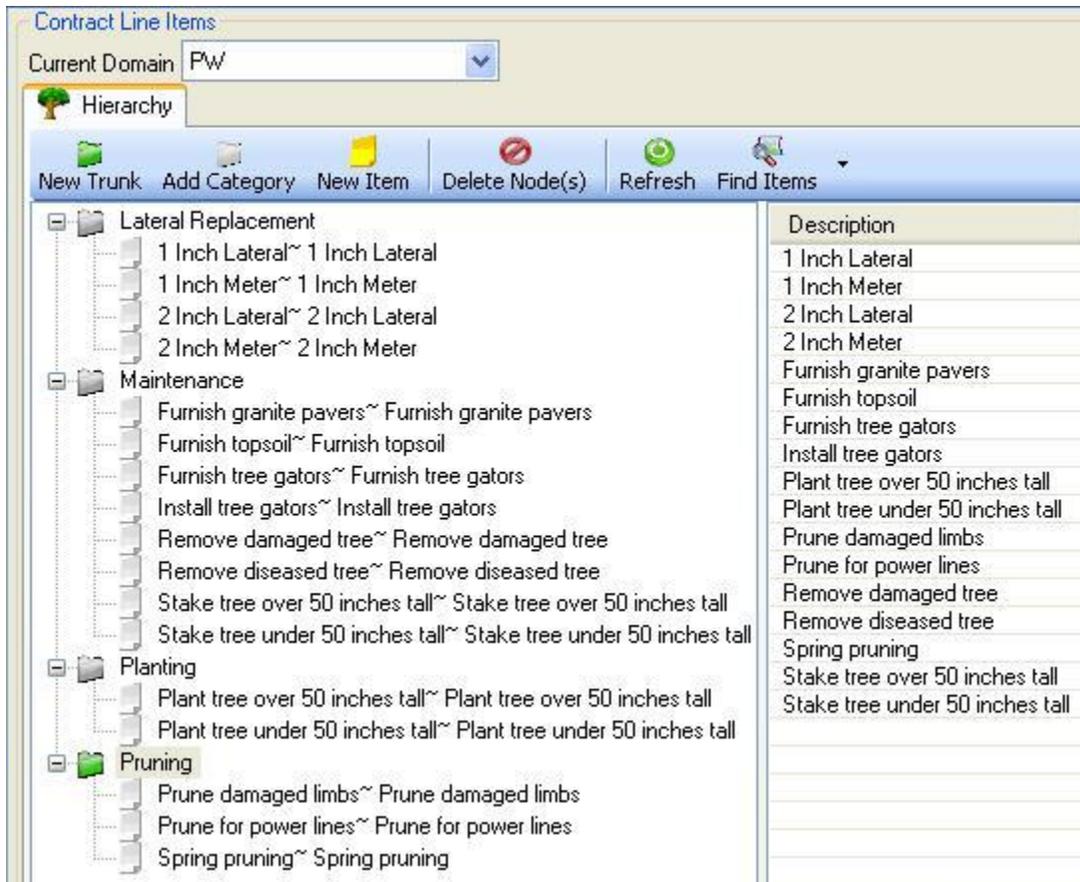
#### [Other System Codes](#)

- Populate the codes to set up the field mappings from another system, like 311, to request templates. This populates the **Other System Code** field found on the value table on the **General** pane of a request.

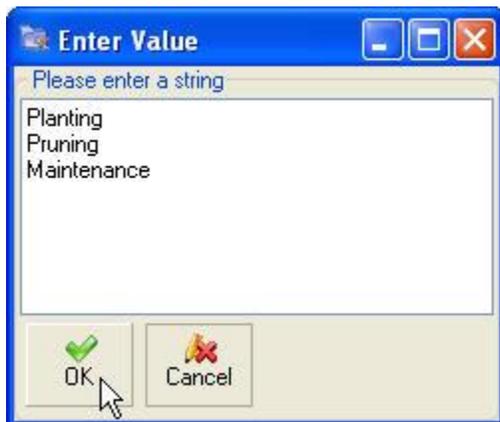
## Contract Line Items

The list of **Contract Line Items** set up in Designer is used to create contracts in Cityworks Server AMS. A contract is built using line items to specify the conditions. Contracts can be used to bid out specified tasks, such as pruning, planting, repairing sidewalks or streets, etc. or to accomplish a certain amount of work. It may have a set budget or consist of a set amount of work or quantity of materials. A contract may also be used to track materials and/or equipment, pay costs by line item, and be spread over multiple work orders or inspections. The remaining units of measure can be calculated to find how much of the contract has been used and what remains.

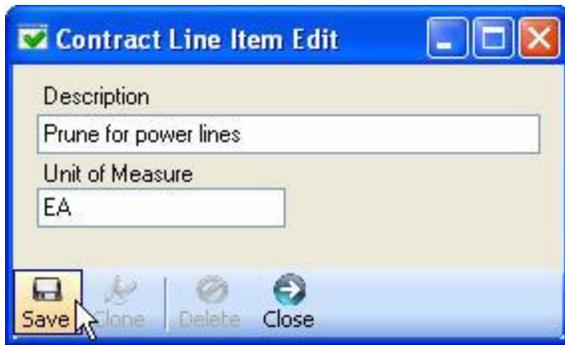
**NOTE:** Contracts can only be linked to work orders or inspections.



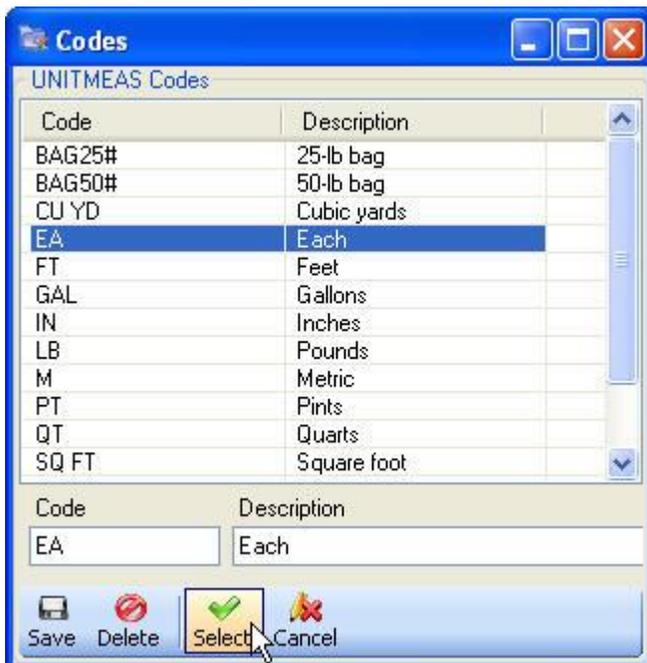
1. Click **New Trunk** to open the **Enter Value** box, type in the names for the trunks and click **OK**.



2. Optional: Select a trunk and click **Add Category** to add categories under each trunk. Add categories for each trunk as needed.
3. Select either the trunk or category from the tree and click **New Item** to open the **Contract Line Item Edit** box for defining line items.
4. Type in the **Description**.

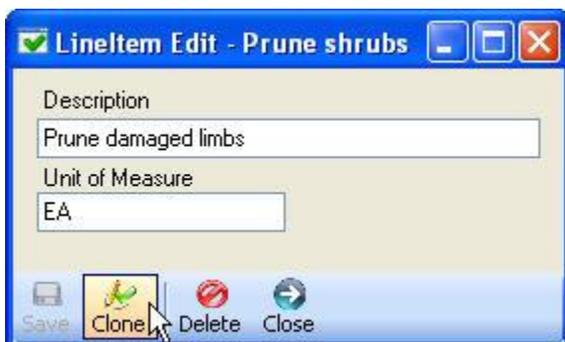


5. Click in **Unit of Measure** to open the corresponding **Codes** box to populate the value.



6. Click the **Save** button.

**TIP:** Clicking the **Save** or **Clone** button does not automatically close the box so items can be cloned or added to the same trunk or category.



7. To add other items under the same trunk or category, change the **Description** and if necessary the **Unit of Measure** and click the **Clone** button to save the new line item.

**NOTE:** The **Clone** button is activated as soon as the **Description** is modified.

8. Follow step 7 until all desired line items are added to the selected trunk or category and then click the **Close** button to close the **Contract Line Item Edit** box.
9. Repeat these steps until all items have been added to each trunk and/or category.

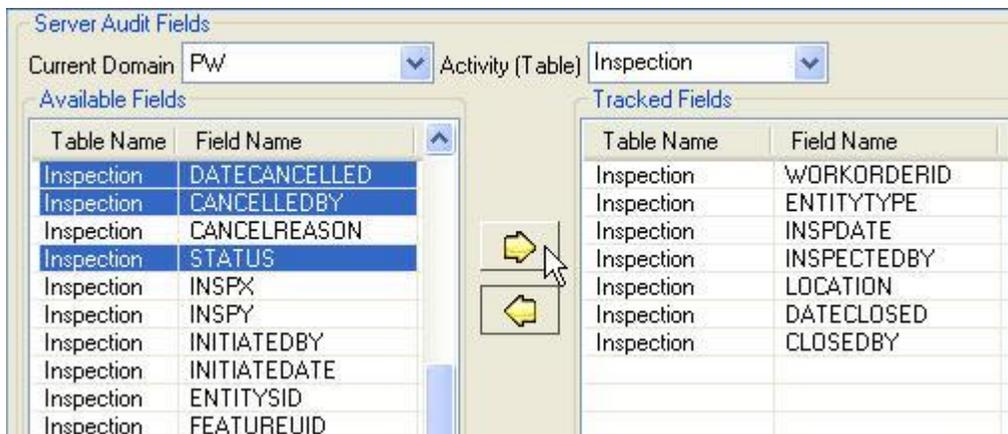
Contract line items can be deleted by opening them from the hierarchy, clicking the **Delete** button, and clicking **Yes** when the confirmation box opens.

**NOTE:** The **Delete Node(s)** button at the top of the **Hierarchy** tab just removes the information from the hierarchy but not from the **Description** list on the right.

## Audit Settings

**Audit Settings** identifies which fields are tracked in the **Audit Log** for service requests, work orders, inspections, contracts, and/or projects. Initial values and any subsequent changes to the selected fields are noted.

1. Select the **Current Domain** from the dropdown.



2. Select the **Activity (Table)** to populate the **Available Fields** on the left.
  - **Contract**
  - **Inspection**
  - **Project**
  - **Request**
  - **WorkOrder**
3. Select the fields to be tracked in the **Audit Log** by moving them to the right.

**NOTE:** To remove field(s), select and move back to the left.

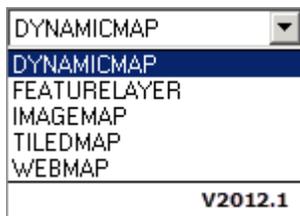
## GIS Services

**GIS Services** sets up the link for where the Cityworks Server applications look for its GIS information. As many as three maps and one geocoding service may be set up per entry. Entries may be assigned to domain(s), group(s), or user(s) to provide specific maps for different users.

In Designer 2011, dynamic, tile, and image service types are supported. Web map and feature layer service types are added in 2012.1. It's very important all services use the same spatial reference. If a REST (Representation State Transfer) endpoint is entered, Cityworks Server uses that value instead of the host and service values. If no REST endpoint is entered, Cityworks Server uses the host and service values.

**NOTE:** *There is no difference between the base or raster map; they just provide two ways to store and display cached information on the main map. For more information on map caching, refer to Esri's ArcGIS help.*

1. Click in the **Value** column in the **Map and geocode service definitions** frame to enter information or open a dropdown list. Required fields include **Main Service Name**, **Main Service REST URL**, **Geocode Service Name**, **Geocode Service REST URL**, and **Geometry Service REST URL**. In the name values, enter the name to display in the legend. In the type values, select from the dropdown list of values.



- **DYNAMICMAP**—Select when using a non-cached map where the data is dynamically rendered (the single fused map cache is set to **False** in the Esri online map service ArcGIS Services Directory). This is an Esri published option.
- **FEATURELAYER**—Select when using a specific layer from the map service, not the entire map. The layer can be either a (spatial) layer or (non-spatial) table.
- **IMAGEMAP**—Select when using an image service.
- **TILEDMAP**—Select when using a cached map service (the single fused map cache is set to **True** in the Esri online map service ArcGIS Services Directory). This is an Esri published option.
- **WEBMAP**—Select when Esri's webmap has been utilized to publish data to ArcGIS Online. Copy the ID portion of the URL from the ArcGIS Services Directory and paste it into the REST URL Value field. This is for web services.

GIS Services

Map and geocode service definitions.

Field	Value
Main Service Name	Main
Main Service Type	DYNAMICMAP
Main Service REST URL	http://192.168.20.23/arc...
Base Service Name	Base
Base Service Type	DYNAMICMAP
Base Service REST URL	http://192.168.20.23/arc...
Raster Service Name	
Raster Service Type	DYNAMICMAP
Raster Service REST URL	
Public Service Name	
Public Service Type	
Public Service REST URL	
Geocode Service Name	KSMMSgeocode
Geocode Service REST URL	http://192.168.20.23/arcgi...
Geometry Service REST URL	http://192.168.20.23/arc...
SOE Service REST URL	http://192.168.20.23/arc...

Save Clone Clear Delete

Apply To

Current Domain

Domain  Group  User

Name

Select an existing service to modify its definition.

Main Service...	Main Servi...	Main Service R...
DYNAMICMAP	Main	http://192.168.2...

Service Associations

Name	Apply To
KSM	Domain

**NOTE:** The **Public Service Name**, **Public Service Type**, and **Public Service REST URL** fields are for users who wish to publish search results as a map that can be shared with others, regardless of whether or not they are a Cityworks user. These fields determine what the map displays. The REST URL field should point to a base map that can be viewed by anyone.

2. Click **Save** to save the information to the **Existing Services**. If required information is missing, a message box opens to tell the user which field to populate.

**NOTE:** Standard Inspections and Equipment Changeout require custom logic included in the Server Object Extension (SOE) Service REST URL when working with ArcGIS 10.1. Read Knowledge Base article [10633](#) for detailed information about the SOE Service field.

3. Go to **Others > Preferences > Server gis model** and select either geodata or rest. If geodata is selected, the two geodata fields are activated. If rest is selected, the SOE field is activated.
4. Select the **Current Domain** and applicable radio button option in the **Apply To** box for **Domain**, **Group**, or **User**.

5. Select the desired domain(s), group(s), or user(s) from the **Name** list who need access to this Server map, using the right arrow to add them.
6. Follow steps 1-4 to add other Server map information.

**NOTE:** Once the map control properties have been defined, the spatial reference of any image service and tiled map service must match the spatial reference of the initial loaded layer. The visual display order is Raster, Base, and Main.

Click on an entry in the **Existing Services** list to change any of the information entered. When the **Save** button is clicked, a confirmation opens to verify the user wants to continue to update the current service. Click **Yes** to update the information.

**TIP:** Updating the **Service Associations** on the lower pane is done by moving the information back and forth. It is not necessary to click the **Save** button to make these changes.

## Asset Edit Fields in Inspection

**Asset Edit Fields in Inspection** sets up the attributes for an asset which can be edited directly within a Cityworks Server AMS custom inspection form to update the geodatabase values.

Inspection Asset Edit Fields

Asset Group: WATER

Features  
 Objects  
 Show Tables Owned by SDE  
 Total Features: 12

Asset	Description
WFIREHYD	Fire Hydrant Feature
WFIRELIN	Service Lateral for Fire Prot...
WHYDLIN	Fire Hydrant Line Feature
WMAIN	Water Main Feature
WPIPEFIT	Pipe Fitting Feature
WPUMPND	Pump Node Feature
WRAWPIPE	Raw Water Pipe Feature
<b>WSERVICE</b>	<b>Service Lateral Feature</b>
WTANK	Tank Feature
WVALVE	Valve Feature
WVAULT	Vault Feature
WWELL	Well Feature

Asset Fields

Field Name
OBJECTID
MATERIAL
FEATURE_ID
PRESSURE_SY...
LOCATION
DATE_INSTALL...
CONTRACTOR
OWNER
RECORDED_LE...
DEPTH_BURIED
STATUS
LEGACY_ID
WARRANTYDATE
CONDITION
CONDITIONDATE
FACILITYID

Inspection Templates

Name	Description
Meter Can I...	Water Meter Can Inspection

Save Remove Show All

Editable Fields

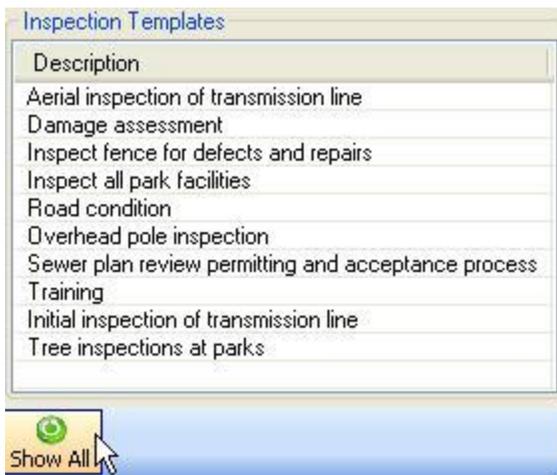
Asset	Field	Sequence	Inspection Template

1. Select the **Asset Group** from the dropdown list.
2. Select **Features** or **Objects** radio button to list the associated features or objects.

- Optional: Check the box for **Show Tables Owned by SDE** if SDE is the owner of the database tables.

**NOTE:** The checkbox for **Show Tables Owned by SDE** appears on the form for users connecting to ArcSDE but not a personal or file-based geodatabase.

- Select the feature or object from the list to populate the **Asset Fields** from the geodatabase.
- Select the desired field(s) from the **Field Name** list that are part of the Cityworks Server AMS inspection which the user will be able to edit.
- Select the custom inspection(s) from the **Inspection Templates** list. If the asset is not already linked to the custom inspection type, click the **Show All** button to list all the custom inspections.



**IMPORTANT:** If linking an asset to a custom inspection which doesn't show up when the asset is selected, be sure to go back to **Custom Inspection Template > Templates** tab to assign the asset to the inspection.

- Click the **Save** button to list the **Editable Fields** on the lower right pane.

## GIS Attribute Updates

**GIS Attribute Updates** allows closing a work order to trigger an automatic geodatabase update. The administrator maps each desired attribute field in the geodatabase to the corresponding work order field or to a custom value so an asset's attribute(s) can be updated when the work order is closed.

- Select the **Asset Group** from the dropdown list.

**Asset Field Update**

Asset Group: WATER

Features  
 Objects  
 Show Tables Owned by SDE  
 Total Features: 24

**Description**

- Anode
- Casing
- Clear Well
- Control Valve
- Enclosed Storage Facility
- Pipe Fitting
- Gravity Main
- Water hydrant
- Water Lateral Line
- Service Point
- Manhole
- Meter
- Meter Station
- Pressurized Water Main
- Production Well
- Pump
- Pump Station
- Scada Sensor
- Storage Basin
- System Valve
- Thrust Protection
- Treatment Plant
- Underground Enclosure
- Water Structure

**Update Definition**

Asset Field: ConditionDate  
 Custom Value  
 Work Order Fields  
 ACTUALFINISHDATE

**Work Order Templates**

Description	Entity
Install Hydrant Line	WLATERALLINE
Install Lateral	WLATERALLINE
Repair Hydrant Line	WLATERALLINE
Repair Lateral	WLATERALLINE
Repair Lateral - Asphalt	WLATERALLINE
Repair Lateral - Concrete	WLATERALLINE
Repair Lateral - Dirt	WLATERALLINE
Repair Lateral - Grass	WLATERALLINE
Replace Hydrant Line	WLATERALLINE
Replace Lateral	WLATERALLINE

**Field Updates**

Event Name	Asset Field	Field Value	WO Field	WO Template
CLOSE	CONDITION	Good		Repair Lateral - Asphalt
CLOSE	CONDITIONDATE		ACTUALFINISHDATE	Repair Lateral - Asphalt
CLOSE	CONDITION	Good		Repair Lateral - Grass
CLOSE	CONDITIONDATE		ACTUALFINISHDATE	Repair Lateral - Grass
CLOSE	CONDITION	Good		Repair Lateral - Concrete
CLOSE	CONDITIONDATE		ACTUALFINISHDATE	Repair Lateral - Concrete
CLOSE	CONDITION	Good		Repair Lateral - Dirt

Buttons: Save, Remove, Show All

Status: \_\_\_\_\_

2. Select the radio button for **Features** or **Objects** to populate the asset **Description** list.
3. Optional: Check the box for **Show Table Owned by SDE** to include these assets in the **Description** list.

**NOTE:** The checkbox for **Show Tables Owned by SDE** appears on the form for users connecting to ArcSDE but not a personal or file-based geodatabase.

4. Select the asset from the **Description** list to populate the associated **Work Order Templates**.
5. Select the **Asset Field** from the dropdown listing the geodatabase fields for the selected asset.
6. Select the applicable radio button and populate the corresponding field to link to the **Asset Field**:
  - **Custom Value**—Type the desired value into the field.
  - **Work Order Fields**—Select from the dropdown list of fields on Cityworks work orders.

Custom Value  
 Good

Work Order Fields  
 ACTUALFINISHDATE

7. Select the applicable **Work Order Templates** from the list, using <Shift + click> or <Ctrl + click> for multiple selections.
8. Click the **Save** button to save the **Field Updates**.
9. Repeat these steps to add any other desired fields.

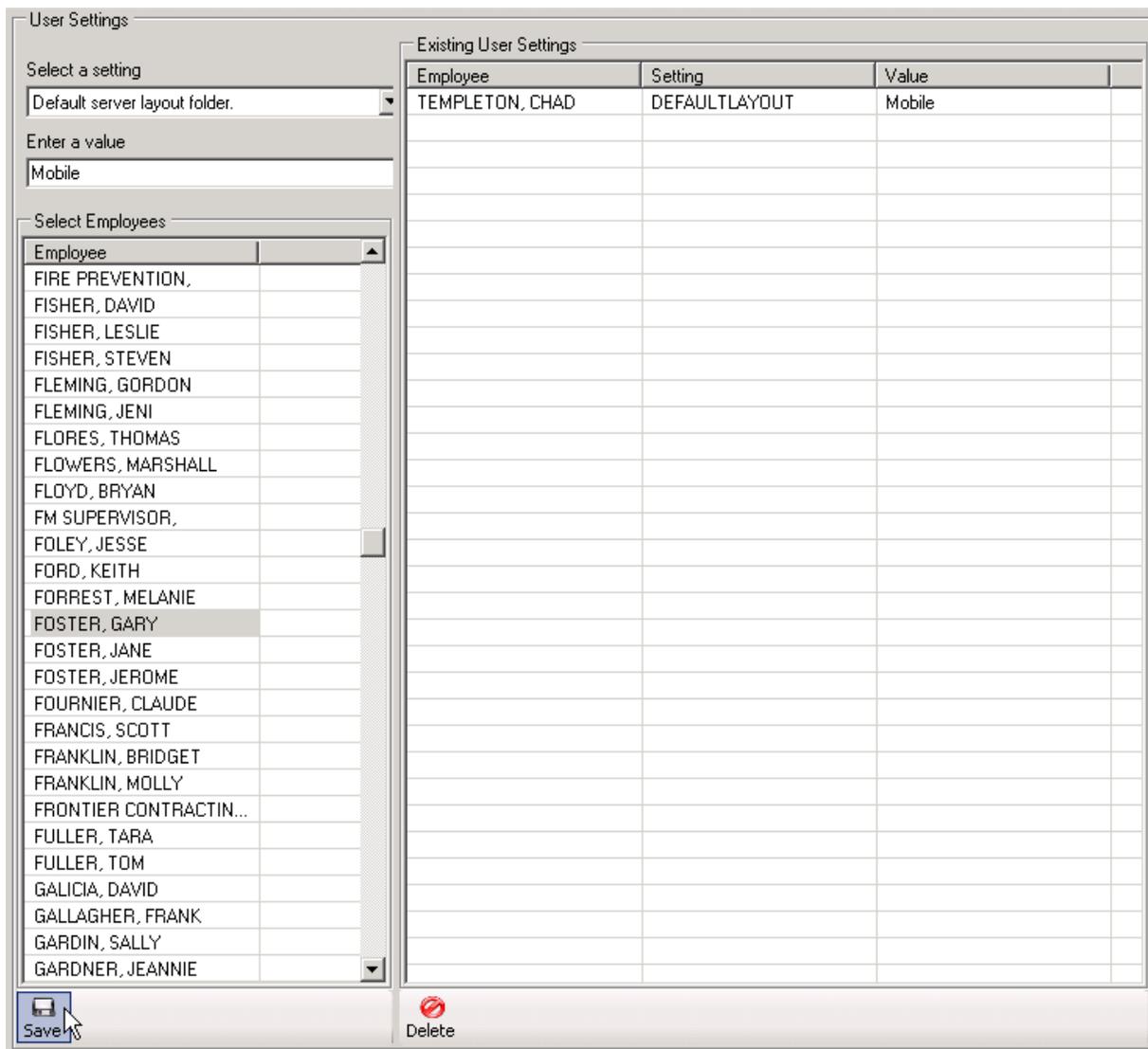
To view the complete list of **Work Order Templates** and **Field Updates**, click the **Show All** button.

To remove, select the field(s) from the **Field Updates** list, click the **Remove** button, and click **Yes** when the confirmation box opens.

## User Settings

**User Settings** allows the Cityworks domain administrator to define a custom layout folder for a specific user. This is a way for the domain administrator to customize that user's user interface (what they see when they log in to Server). These settings overwrite the value of the **Server default layout folder** in **Others > Preferences**.

**User Settings** is also used to configure field mode for individual users or groups of users. See below for more information on configuring field mode.



**Default server layout folder** is the only option for the **Select a setting** dropdown.

1. **Enter a value** in the text box.
2. Select the desired employee(s) from the list.
3. Click the **Save** button to list the employees in the **Existing User Settings** panel.

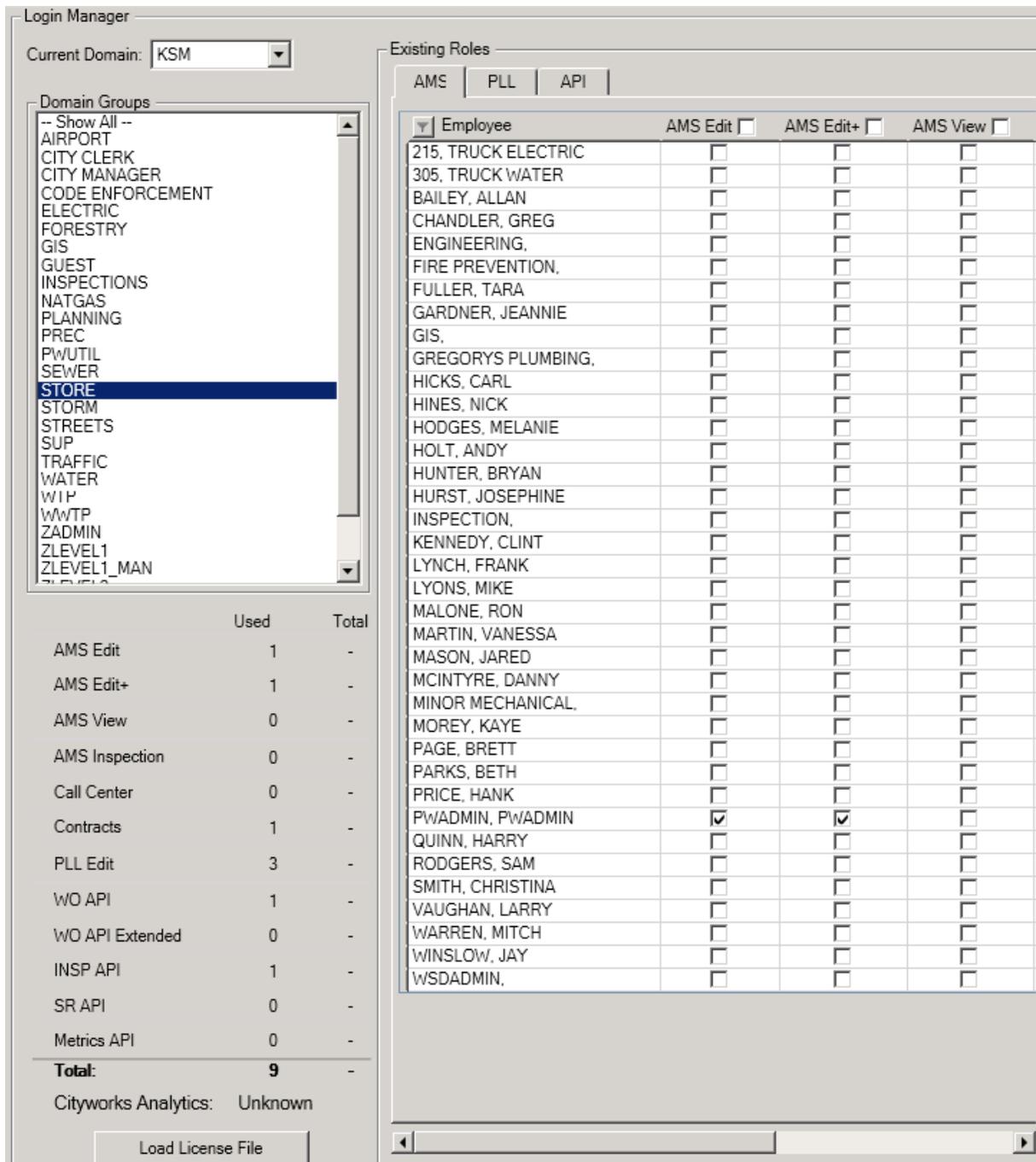
Browse to C:/inetpub/wwwroot/<sitename>/WebSite/XML. There will be a folder with the same name as what you entered in the **Enter a value** field. Inside this folder, there are XML files that can be customized. The users you assigned to this value will see their user interface as whatever is configured in these files. For more information on XML customization, see Server UI Customization on mycityworks.com under the Resource and Download Center.

Field mode allows users to use Cityworks in a mobile setting, such as on a tablet at the job site. Browse to C:/inetpub/wwwroot/<sitename>/WebSite/XML. There is a folder here titled **Field** that has some out-of-the-box custom XML files provided for you. If you want to use this XML customization for field mode, return to **User Settings Designer** and type **Field** in the **Enter a value** text box, select the desired employee(s) from the list, and click **Save**.

If you would like to use your own XML customizations for field mode, you would need to create those XML files, add them to a folder under C:/inetpub/wwwroot/<sitename>/WebSite/Xml, and then go to **User Settings** in Designer and enter the name of that folder in the **Enter a value** text box, select the desired employees, and click **Save**.

## Login Manager

**Login Manager** allows the administrator to track the number and type of users in the system by designating which users have access to AMS, PLL, or APIs. It allows the administrator to easily see how many licenses they have and how many are being used.



1. Select the **Current Domain** from the dropdown list.
2. Select the desired **Domain Group**.
3. Select the tab for **AMS, PLL, or API**.
4. Find the desired employee(s) from the list and check the applicable boxes.

For **AMS**, check the box to give rights as follows:

- **AMS Edit**—gives user rights to view and edit service requests, work orders, and inspections.

- **AMS Edit+**—gives the same rights as **AMS Edit**, as well as web services.
- **AMS View**—gives user rights to view service requests, work orders, and inspections.
- **AMS Inspection**—gives user rights to view and edit inspections, as well as view work orders and service requests.
- **Call Center**—gives user rights to view and edit service requests.
- **Contracts**—gives user rights to view and edit contracts.

5. Click the **Load License File** button.

**NOTE:** You might have to maximize the Designer window in order to see the **Load License File** button.

## Equipment Changeout

**Equipment Changeout** allows the domain administrator to customize labels on the Changeout forms.

Equipment Changeout

Current Domain:

Asset Group:

Features:

Objects:

Asset Types

- GLOBAL -
- Cleanout Feature
- Engineering Node Feature
- Force Mainline Feature
- Gravity Mainline Feature
- Grease Trap Feature
- Lift Station Feature
- Manhole Feature
- Pipe Fitting Feature
- Service Lateral Feature
- Siphon Feature
- Valve Feature

Edit

Field Name:

Field Label:

GDB Field Name:

Coded Value:

Configuration

Asset Type	Field Name	Field Label	GDB Field Name	Coded Value
EMETER	NUM1	Off Peak Kw		
EMETER	NUM2	Off Peak Kwh		
EMETER	NUM3	On Peak Kw		
EMETER	NUM4	On Peak Kwh		
EMETER	NUM5	Multiplier		
EMETER	TEXT1	TransMitter No		
EMETER	TEXT2	Form		
EMETER	TEXT3	Class		
EMETER	TEXT4	Demand Type		
WBACKFLOW	DATE1	Install Date		
WMETER	NUM1	Primary		
WMETER	NUM3	Meter ID	DEVICE_SID	
WMETER	TEXT1	TransMitter No		

1. Select the **Current Domain** from the dropdown list.
2. Select the desired **Asset Group**.

3. Select the **Features** or **Objects** option.
4. Select the **Asset Type** from the list.
5. Select the **Field Name** to edit from the dropdown list.
6. Enter the **Field Label** to customize the Changeout form.
7. Either enter the **GDB Field Name** or select a **Coded Value**:
  - **GDB Field Name**—Enter the name of the field from the geodatabase.
  - **Coded Value**—Select the desired work order entity field.
8. Click **Save** to add it to the Cityworks geodatabase and list it in the **Configuration** section.

## Attachment Mappings

By default, a user can only download attachments that have the same path as what is specified in the **Server attachments root directory** preference in Designer (under **Others > Preferences**). **Attachment Mappings**, however, allows you to map a path so that attachments can be downloaded from another directory.

**Attachment Mappings** can also be used to specify which drives or folder locations Cityworks Server will try to access.

**NOTE:** *If attachments are stored anywhere other than the default image directory under C:\inetpub\wwwroot\<site\_name>|..., you have to set the attachment mapping.*

Source	Alias
C:\Images\CW	
X:\office\docs	\\DocServer\office\docs

To give Cityworks Server access to a folder location:

1. Select the **Current Domain**.
2. Enter the **Source** path for the directory. This must be either a local drive or a UNC path.

**NOTE:** *The impersonate user must have permissions for the folder location because Cityworks Server accesses those locations as the impersonate user.*

An **Alias** is needed when the **Source** path cannot be resolved by Cityworks Server and an alternate path needs to be used. If an **Alias** is defined, Cityworks Server replaces the **Source** with the **Alias** before attempting to find the folder or file. If you are storing attachments in a location other than what is specified in the **Server attachments root directory** preference, you need to define both a **Source** and **Alias**.

3. If needed, enter an **Alias**.
4. Click **Save**.

To remove a mapping, select it in the **Configured Mappings** panel and click **Delete**.

# Others

**Others** consist of these miscellaneous functions to complete the Cityworks setup.



- **Units of Measure**—Assigns the units of measure used for fields on Cityworks inspection and test forms so they match those used for the asset in the geodatabase.
- **Codes**—Defines or imports codes, descriptions, and/or scores for various Cityworks fields, displays the CCTV code groups, and sets up the dynamic labor codes.
- **Custom Data Fields**—Sets up the custom fields for employee, equipment, material, contractor, and timesheet.
- **Preferences**—Defines global settings for the domain, including a holiday schedule, and sets up the email functions.
- **I/I Quantity Matrix for Smoke Testing**—Sets up the light, medium, and heavy quantities for the different leak types and categories.
- **Map Layers and Fields**—Sets up districts, zones, commissioner areas, or any other geographic area by map layer for assigning service requests.
- **Customer Accounts**—Sets up or imports the customer account information and imports street names with their codes.
- **CU Material Groups**—Defines “favorites” (assemblies or groups of materials) used only with the Miner & Miner Designer interface.
- **Macro Manager**—Updates the macros for custom print and email templates when a new version of Cityworks is released so the data loads into the fields correctly.
- **Record Lock**—Identifies which requests or work orders are currently locked by Cityworks users and allows the administrator to remove the lock(s).
- **Other System Codes**—Acts as a look-up table for interfacing Cityworks request templates to codes in a third-party software, such as 311. Mappings can be made manually or imported from a file.

## Units of Measure

**Units of Measure** allows an administrator to define measurement units for some fields on the inspection tables to sync them up with geodatabase information. For example, if manhole depth is listed in inches or feet in the geodatabase, then the depth to the defect can be listed with the same units in the Cityworks database. Current measurement units can be viewed for each inspection.

1. Select the **Current Domain** from the dropdown list.

Field Name	Unit of Measure
DIST_LEFT	Ft.
DIST_ON_PIPE	Ft.
DIST_RIGHT	Ft.
ESTPIPEIANDI	GPM
FLOWAFTER	GPM
FLOWBEFORE	GPM

2. Select the **Asset Group** from the list on the left to populate the **Table Name** list.
3. Select the **Table Name** for the inspection on the right.
4. Select a **Field Name** from the list on the bottom pane to load it into the center area.

**NOTE:** The **Field Name** cannot be changed.

5. Type in the desired **Unit of Measure** for the field.
6. Click the **Save** button to save the measurement.
7. Repeat these steps to add each field and unit for the table.
8. Repeat for each table in the asset group and for each asset group.

## Codes

Cityworks **Codes** define the lists used to populate various feature inventory, service request, work order, or inspection fields. Code types and definitions may also be imported into Cityworks code tables. Many codes are used on Cityworks inspection forms.

**NOTE:** The **CCTV**, **Cost Codes**, and **Job Codes** tabs are only visible when the corresponding **Preferences** have been set.

### Add/Modify Tab

The **Add/Modify** tab allows the administrator to populate or modify existing codes to customize the valid values a user may select and add additional codes with their values for any user-defined custom fields.

**NOTE:** Not all listed code types are used with ArcGIS; some are only used with the ArcView 3x application. See [Appendix 1: Cityworks Codes](#) for information on which codes to populate.

**TIP:** **APRIORIT** under **Others** requires at least one code to be defined.

1. Select the **Current Domain** from the dropdown list.

The screenshot shows the 'Codes' dialog box with the following details:

- Current Domain:** WSD
- Asset Group:** OTHERS
- Code Types Table:**

Code	Description
AACTSRC	Account Funding Source
ABILLTYP	Billable Type
ABOOLEAN	Boolean
ACALLTYP	Caller Type
ACCTLINE	Account Line Item Num
ACITYCOD	Code for City Name
ACODEMAP	Code Mapping
ACONTRTYP	Contractor Type
ACTGCODE	ActPerf Mgt Unit Description
- Codes and Descriptions Table:**

Code	Description
APT	Apartment
BUS	Business
COUNCIL	City Council
MAYOR	Mayor's Office
GOV	Other Government Office
RES	Resident
VISIT	Visitor
POL	Police Department
- Code Type Detail:**

Code Type	Description
ACALLTYP	Caller Type
- Code Detail:**

Code	Description
POL	Police Department

2. Select the **Asset Group** from the dropdown list to load the associated **Code Types**. Use **Others** for codes that apply to more than one asset group.

**TIP:** Codes belonging to an asset group generally begin with the same letter so they are easily recognizable. Most **Others** codes begin with the letter **A**.

3. Select the **Code Format**:

- **Codes and Descriptions**—Use for fields that do not have scores associated to them. This is the default setting.
- **Descriptions and Scores**—Use only for predefined inspections.

The screenshot shows the 'Codes' application window. At the top, the 'Current Domain' is set to 'PW'. Below this are buttons for 'Add/Modify', 'Import', and 'CCTV'. The 'Asset Group' is 'SEWER' and the 'Code Format' is 'Descriptions and Scores'. The 'Code Types' list on the left includes: SDYESRC (Suspected Source of I/I), SFLOW (Observations of Manhole Flow), SFRMCND (Observations of Manhole Frame), SGRNDCND (Observations of Ground Cond...), SIANDI (Amount of Inflow and Infiltration), SINLTCND (Inlet Condition), SLEAKCAT (Locations of Leak), SLEAKSRF (Surface Cover at Leak), and SLEAKTYP (Leak Source). The 'Descriptions and Scores' table on the right is as follows:

Description	Score
Steady	.0000
Stagnant	1.0000
Low	1.0000
Pulsing	1.0000
Moderate	2.0000
Sluggish	2.0000
High	3.0000
Turbulent	3.0000
Surcharging	4.0000

Below the table, there is a form for editing a code. The 'Code Type' is 'SFLOW' and the 'Description' is 'Observations of Manhole Flow'. The 'Code' field is empty, the 'Description' field contains 'Spillage', and the 'Score' field contains '4.0000'. There are 'Save', 'Clear', and 'Delete' buttons below the form.

- **Codes, Descriptions and Scores**—Use for **TV Inspection Observations**.

Code Format  
Codes, Descriptions, and Scores

Codes, Descriptions, and Scores

Code	Description	Score
Crack	A - < 1/2in W and < 1ft L	1
Camera	A - Begin 1/4 Pipe Water	0
Joint	A - DRP JT > 90% Clr	3
Debris	A - Light	1
Roots	A - Light	1
Infiltration	A - Light (0 to 1 gpm)	3
Lateral	A - Protruding Svc 0-1in	1
Crack	B - < 1/2in W and 1-2ft L	2
Camera	B - Begin 1/2 Pipe Water	0
Joint	B - DRP JT 80 to 90% Clr	6
Debris	B - Medium	2
Roots	B - Medium	2
Infiltration	B - Medium (1 to 5 gpm)	5
Lateral	B - Protruding Svc 1-2in	2
Crack	C - < 1/2in W and > 2ft L	3
Joint	C - DRP JT < 80% Clr	9

Code Description Score

Debris C - Heavy 3

Save Clear Delete

**NOTE:** The **Code Format** selection determines which Code Types are listed in the left pane and which fields are active at the bottom of the right pane.

If the code type is not supported, the **Code Types** section will say **NA, Cannot define codes for current selection.**

4. Select an existing **Code** and **Description** from the **Code Types** list on the left pane or add a new custom **Code Type**, 8 characters maximum, and **Description** by typing in the fields at the bottom of the left pane and clicking the **Save** button.

**NOTE:** **Code Type** is not editable; **Description** may be edited if desired by typing in the field and clicking **Save**. The first letter of each code represents the asset group and cannot be changed.

5. Type in the applicable fields at the bottom of the right pane for **Code**, **Description**, and/or **Score**.

**NOTE:** The **Clear** button clears the **Code**, **Description**, and **Score** fields.

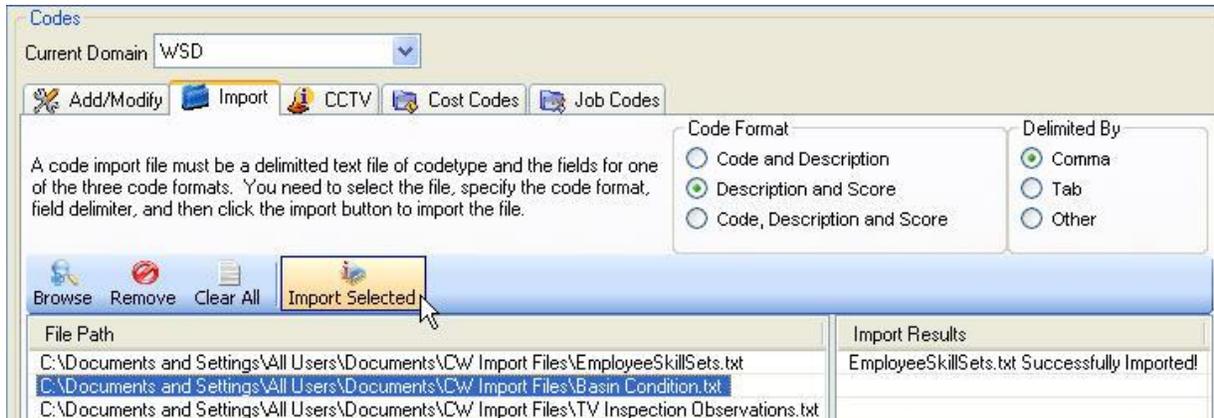
6. Click the **Save** button, which saves the information into the list and clears the fields for adding additional entries.

**NOTE:** A code may be deleted by clicking on it in the list to load the fields at the bottom of the pane, clicking the **Delete** button and clicking **Yes** when the confirmation box opens.

7. Repeat steps 5-6 to add the rest of the information to the **Code Type**.
8. Add all relevant **Code Types** by repeating steps 3-7 for each **Asset Group**.

## Import Tab

The **Import** tab allows the administrator to add codes by importing them from an existing file rather than using the **Add/Modify** tab to add them in one at a time. The file must be a delimited text file in one of the three formats allowed.



1. Select the radio button for the desired **Code Format**.

**NOTE:** *Code Formats* are described in the previous section under step 3.

2. Select the radio button option for **Delimited By** type.
3. Click the **Browse** button to open the **Select Code File(s) to Import** box.

**TIP:** To load multiple files at the same time, keep them in the same folder.

4. Browse to the desired file(s) and click **Open** to load the **File Path** in the list.

**TIP:** To make it easier to find the desired file when the **File Path** is long without having to enlarge the window, the hidden column **Filename** may be opened by hovering over the right margin of the column header until the double arrow appears, and then dragging it open.

File Path	Filename
C:\Docu...	TV Inspection Observations.txt
C:\Docu...	Basin Condition.txt
C:\Docu...	EmployeeSkillSets.txt

5. Select the desired file(s) and click the **Import Selected** button.

**NOTE:** Multiple files may be imported at the same time as long as the **Code Format** and file delimiter are the same.

At least one file must be selected before clicking **Import Selected** or a message opens to remind the user.

6. When the confirmation box opens to verify the code format of the file is correct, select **Yes** to import the information.

**TIP:** The information varies according to the radio button option selected under **Code Format**. The **Code** listed on the **Add/Modify** tab must be the first entry on each row.

If the information is successfully imported, the imported file name lists in the **Import Results** column across from the path. If the format is not correct, either an error box opens describing the problem or the first row causing the problem lists in the **Import Results** column.

Import Results
EmployeeSkillSets.txt Successfully Imported!

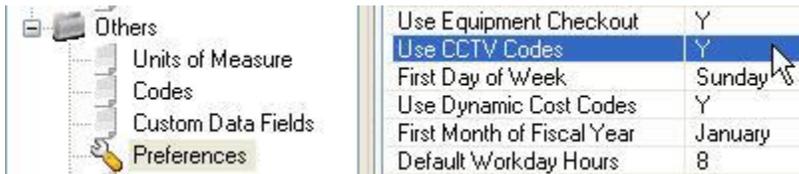
To remove any entries from **File Path**, select and click the **Remove** button. To clear all the files, use the **Clear All** button and click **Yes** when the confirmation box opens.

## CCTV Tab

The **CCTV** tab displays the standard PACP CCTV codes. These PACP codes are also used by the Cityworks CCTV Interface for PACP add-on application. When NASSCO (National Association of Sewer Service Companies) updates their PACP codes, these codes can be modified accordingly. The staff at Azteca Systems Inc. strives to keep these codes current but they may be modified by the Cityworks domain administrator so they are always up-to-date.

**NOTE:** PACP is the Pipe Assessment and Certification Program of NASSCO designed to standardize sewer pipe condition as assessed by a closed-circuit television (CCTV) video camera.

These codes can be used on the Cityworks TV Inspection form by setting the **Use CCTV Codes** (item #24) to **Y** under **Others > Preferences**. The **CCTV** tab is only available when this preference has been set to **Y**.



1. Verify that all needed CCTV codes are included with the current parameters.

Codes

Current Domain WSD

Add/Modify Import CCTV Cost Codes Job Codes

**AZTECA.CCTVCodes**

	CODEGROUP	CODE	GRADE	DESCRIPTION	CAUSE	VALUEFIELD	LORANGE	HRANGE
	Access Points	ATC	0	Tee Connection	0		0.000	0.000
	Access Points	AWA	0	WW Access Device	0		0.000	0.000
	Access Points	AWW	0	Wet Well	0		0.000	0.000
	Pipe Failures	B	4	Broken	S	ClockAtFrom	0.000	2.999
	Pipe Failures	B	5	Broken	S	ClockAtFrom	3.000	100.000
	Pipe Failures	BSV	5	Broken Soil Visible	S		0.000	0.000
	Pipe Failures	BVV	5	Broken Void Visible	S		0.000	0.000
	Crack	CC	1	Crack Circumferenti	S		0.000	0.000
	Crack	CL	2	Crack Longitudinal	S		0.000	0.000
	Crack	CM	3	Crack Multiple	S		0.000	0.000
	Crack	CS	2	Crack Spiral	S		0.000	0.000
	Deformed	D	4	Pipe	S	Percent	0.000	10.000
	Deformed	D	5	Pipe	S	Percent	10.001	100.000
	Deposits Attached	DAE	2	Encrustation	0	Percent	0.000	10.000
	Deposits Attached	DAE	3	Encrustation	0	Percent	10.001	20.000
	Deposits Attached	DAE	4	Encrustation	0	Percent	20.001	30.000
	Deposits Attached	DAE	5	Encrustation	0	Percent	30.001	100.000
	Deposits Attached	DAGS	2	Grease	0	Percent	0.000	10.000

- To change a field, double-click in the field and type in the correct information.

	Weld Failure	WFZ	0	Other	S		0.000	0.000
	Collapse	XB	5	Brick	S		0.000	0.000
▶	Collapse	XP	5	Pipe	S		0.000	0.000
*								

- To add in a new code, scroll to the bottom of the list and click in the first column of the blank, asterisked row to activate the row and type in the new information.

## Cost Codes Tab

The **Cost Codes** tab works in conjunction with the cost code information on the **Employees** window. Cost codes are used by organizations to add custom pay rates not found on the **Employees** tab for adding labor to requests and work orders.

**NOTE:** The **Cost Codes** tab is only visible when the **Use Dynamic Cost Codes** setting is set to **Y** in **Preferences (General tab)**.



**IMPORTANT:** Do not use dynamic cost codes for employee labor rates if asset- or task-based costs are desired. Cityworks does not yet support this functionality.

Do not define a **Regular** job code as it is already in use. A message opens to tell the user that **Regular** cannot be used as a dynamic code because it is reserved and used in all labor entries.

1. Enter the **Code**, maximum of 20 characters, and the **Description**, up to 250 characters.

Code	Description	Sequence ID
OVERTIME 2	Overtime 2 (50+ hours)	6

Cost Codes	Description	Sequence	Domain
ONCALL	On Call	1	2
SWING	Swing Shift	2	2
GRAVEYD	Graveyard shift	3	2
WKENDHOL	Holiday Weekend	4	2
OVERTIME1	Overtime 1 (40-49 hours)	5	2

2. Enter the **Sequence ID** to indicate the order for listing the codes.

**TIP:** If an alphabetical listing is wanted, use **1** for all **Sequence IDs**.

3. Click the **Save** button to add the information to the list and to the Cityworks database.

The **Clear** button clears the fields above the buttons to allow new information to be entered. The **Refresh** button lists the cost codes for all domains.

To delete a cost codes, select the desired code(s) and click the **Delete** button. Click **Yes** when the confirmation box opens asking if the user wants to continue.

The **Cost Code** must be in the **Current Domain** to be deleted or an error message opens. It must also not be assigned to any employee(s). Remove the cost code from the employee(s) listed on the **Assign Cost Codes** tab before deleting the cost code.

## Job Codes Tab

The Job Codes tab defines customized job codes used on the **Employees** window to allow paying a flat rate for a particular job type that overrides the employee's regular labor rate, such as union-based rates for digging a ditch, driving, operating a jackhammer, etc. These rates are set with a start and end date so the date the work is done determines which rates apply. This enables different rates to be used as needed without having to constantly update the rates under each employee.

**NOTE:** The **Job Codes** tab is only visible when the **Use Dynamic Cost Codes** setting is set to **Y** in **Preferences (General tab)**.

1. Type in the **Code**, **Description**, and **Hourly Rate**.

Codes

Current Domain WSD

Add/Modify Import CCTV Cost Codes Job Codes

Code: JACKHMR Description: Jackhammering Hourly Rate: 16.000

Start Date: Sunday, July 01, 2007 End Date: Monday, June 30, 2008

Save Clear Delete Refresh

Code	Description	Domain	Hourly Rate	Start Date	End Date
CLEAN	Cleaning	2	8.000	7/1/2007	6/30/2008
CONSULT	Consultation Fees	2	18.000	7/1/2007	6/30/2008
EMERGFLOOD	Emergency Flooding	2	25.000	7/1/2007	6/30/2008
EXCAV	Excavating	2	15.500	7/1/2007	6/30/2008

2. Select a **Start Date** and **End Date** using the dropdown calendars.

**NOTE:** *Start and End Date cannot overlap for the same Code.*

3. Click the **Save** button to save the information to the list below.

**NOTE:** *To delete a job code, click on it and click **Delete**.*

4. Add all other codes desired for each domain.

## Custom Data Fields

**Custom Data Fields** sets up the custom tables for employees, equipment, material, contractor, and timesheet.

Custom Data Fields

Tables

Tables: EMPLOYEE Field Name: Field Type:

Default Value:

Field Visible  Field Required Save Delete

Field Name	Field Type	Visible	Required	Code Type	Code/Desc	Min Value
EMERGENCY CONTACT	VARCHAR	Y	N		CODE	
CONTACT PHONE	VARCHAR	Y	N		CODE	

1. Select the desired table from the **Tables** dropdown list.

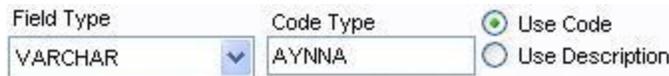
2. Type in the **Field Name**.

3. Select the **Field Type** from the dropdown list:

- **Date**—No further information needed.
- **Numeric**—Type in a **Min Value** and **Max Value**.

**TIP:** For the software to do a numeric validation on the field value a user enters, type in at least a **Min Value**; otherwise any text may be entered in the field.

- **Varchar**—For variable character text. If desired, a **Code Type** may be used to set valid values for the field. Click in the **Code Type** field to select the desired code type.



The screenshot shows a form with two main sections. The first section has a 'Field Type' dropdown menu with 'VARCHAR' selected. The second section has a 'Code Type' text input field containing 'AYNNA'. To the right of the 'Code Type' field are two radio buttons: 'Use Code' (which is selected) and 'Use Description'.

4. Select the radio button option for **Use Code** or **Use Description** for how to display the code for the user.

Custom **Code Types** also need to be populated with values under **Others > Codes**.

5. Check the **Field Visible** box to display the field on the service request or work order.

**TIP:** Uncheck **Field Visible** to store information where the user does not need to view the field and to prevent the field from being edited, such as an account code.

6. Check the **Field Required** box if the field is mandatory.

Requiring custom fields means the user cannot save the record until this information is entered.

7. Click the **Save** button to save the custom field.

## Preferences

Global domain settings are found on the **Preferences** window. Defaults for specified fields and items on requests and work orders may be set. Map polygon layer names can be defined for **Map Page**, **Shop**, and **Tile Number** to populate the respective fields on a request or work order. There are three tabs:

- **General** for setting global domain settings.
- **Email Settings** for setting up email functionality.
- **Holidays** for listing the organization's holiday schedule for cyclical work orders.

### Preferences General Tab

The **General** tab sets up the basic preferences for Cityworks, such as enabling functions and setting default values. These preferences are set for the entire domain.

There are 3 columns that are hidden by default:

- **Element**—Lists the name of the field in the **Preference** table.
- **Default Value**—Lists the default reflecting the preference most Cityworks users select for the option.

- **Default Order**—Use to put the list back in the original order if it has been sorted by another column.

To display these hidden columns, double-click to the right of the **Value** header until all 3 display.

Double-click here to show hidden columns

Description	Value	←Element	Default Value	Default Order ▲
Default Work Order Cost View	ACTUAL	WOCOSTVIEW	ACTUAL	0
Default Geocoding Locator Type	STREET	ADDRESSTYPE	STREET	1
Allow Materials to be Edited in Designer	ENABLED	DESIGNERMATBTN	ENABLED	2
Manually Assign Work Order IDs	DISABLED	MANASSIGNWOID	DISABLED	3
Manually Assign Ratings	DISABLED	MANASSIGNRATING	DISABLED	4

1. Select the **Current Domain**.

Preferences

Current Domain: KSM

General | Email Settings | Holidays

Description	Value	Default Value	Default Order ▲
Default Work Order Cost View	ESTIMATED	ACTUAL	0
Default Geocoding Locator Type	STREET	STREET	1
Allow Materials to be Edited in Designer	ENABLED	ENABLED	2
Manually Assign Work Order IDs	DISABLED	DISABLED	3
Manually Assign Ratings	DISABLED	DISABLED	4
Allow Changes to Initiated Date/Time	ENABLED	DISABLED	5
Default Area Code	801		6
Map Feature Name	HSGD		7
Map Field Name	HALFSECT		8
Tile No. Feature Name	NBHD		9
Tile No. Field Name	NEIGHBOR		10
Shop Feature Name			11
Shop Field Name			12
District Feature Name	PLAN_SUBAREAS		13
District Field Name	SUBAREA		14
Default District			15
Default Request Status - Recent	OPEN	OPEN	16
Default Hours for Recent Request Search	4	4	17
Default Work Order Status - New	OPEN		18
Default Request Status - New	OPEN		19
Copy Caller QAs to Request Comments	N	N	20
Use ArcGIS Data Model	Y	Y	21
Include Cancelled Templates and Tasks in Searches	N	N	22
Use Equipment Checkout	N	N	23
Use CCTV Codes	Y	N	24
First Day of Week	Sunday	Sunday	25
Use Dynamic Cost Codes	N	N	26
First Month of Fiscal Year	January	January	27
Default Workday Hours	8	8	28
Default Applied Overhead Percent	105	0	29
Default Budget Range Years	5	3	30

Save  Update 'Print Templates - last update.' to current date/time.

2. Double-click in the **Value** field to enter text or toggle between the choices. All of the options are explained below.
3. Check the **Update "Print Templates – last update" to current date/time** box to populate the current date/time when the **Save** button is clicked to capture the date if using a network location to update custom print templates. Also fill in the **Print Templates – network location** field by navigating to the file where custom Cityworks print templates are stored. The software compares this date to the one stored with the templates to use the newer print template.

**NOTE:** This checkbox must be checked each time a new service pack containing new templates is installed to refresh the date.

Print Templates - network location.	\\Datahead\cddata
Print Templates - last update.	4/2/2010 2:49:04 PM

4. Click the **Save** button.

The Designer preferences are described and numbered according to their default order.

0. **Default Work Order Cost View**—Toggles between **ACTUAL** and **ESTIMATED** for selecting the default radio button option on the **Labor**, **Material**, and **Equipment** panes for new work orders.
1. **Default Geocoding Locator Type**—Toggles between **STREET** and **PARCEL** to select which geolocating service is active on requests and work orders.

**NOTE:** Geolocating services must have the word **street** in the name for those using street layers or **parcel** for those using point or polygon layers.

2. **Allow Materials to be Edited in Designer**—Toggles between **ENABLED** and **DISABLED** for users of Cityworks Storeroom to determine whether material edits may be made in Designer or just in Storeroom (**DISABLED**). Designer contains all the fields found in Storeroom; however, the fields for compatible units are found only in Designer.
3. **Manually Assign Work Order IDs**—Toggles between **DISABLED** which assigns a consecutive, system-generated ID number and **ENABLED** which allows users to assign work order numbers.

**NOTE:** Azteca Systems Inc. does not recommend enabling users to assign work order IDs.

4. **Manually Assign Ratings**—Toggles between **DISABLED** and **ENABLED** to allow ratings for certain inspections to be manually assigned.
5. **Allow Changes to Initiated Date/Time**—Toggles between **DISABLED** and **ENABLED** where date/time initiated may be changed.

**TIP:** Date/time stamps for initiating service requests and/or work orders are tracked in the **Audit Log** so the original date/time may still be viewed. **Allow Changes to Initiated Date/Time** is useful if the information is entered into Cityworks at a later time.

6. **Default Area Code**—For areas with only one area code for phone numbers, type in the area code. If the area has more than one area code, enter one as the default **Value**.

**NOTE:** If **Auto format phone numbers** is set to **Y**, a **Default Area Code** must be entered. If not, the field may be left blank.

7. **Map Feature Name**—Type the name of the polygon feature class to use to spatially derive map names or grid locations.

8. **Map Field Name**—Type the field name for the map pages in the **Value** field.
9. **Tile No. Feature Name**—Type the name of layer where the tile information is stored.
10. **Tile No. Field Name**—Type the name of the corresponding field inside the **Tile No.** layer.
11. **Shop Feature Name**—Type the name of the layer where the **Shop** information is stored.
12. **Shop Field Name**—Type the name of the **Shop** field from the **Shop** layer.
13. **District Feature Name**—Type in the name of the layer containing the **District** information.
14. **District Field Name**—Type the name of the **District** field from the **District** layer.
15. **Default District**—Enter the default **District**.
16. **Default Request Status - Recent**—Toggles between **OPEN** and **ALL** for whether to list only the open requests or all of the recent requests on the **Recent** window.
17. **Default Hours for Recent Request Search**—Type in the number of hours for **List Service Requests in last \_\_\_\_ Hours** on the **Recent** window.
18. **Default Work Order Status - New**—Select the default status for a new work order from the **WOSTATUS Codes** box.

**NOTE:** Status codes are customized by the organization so may vary from those shown.

Code	Description
APPR	Approved
C	Completed
CLOSED	Closed
IP	In progress
NS	Not Started
OPEN	Open
PEND	Pending
UNK	Unknown

Code:  Description:

Save Delete Select Cancel

19. **Default Request Status - New**—Select the default status for a new request from the **SRSTATUS Codes** box.

Code	Description
APPR	Approved
C	Completed
CLOSED	Closed
IP	In Progress
NS	Not Started
OPEN	Open
PEND	Pending
UNK	Unknown/Not Specified

20. **Copy Caller QAs to Request Comments**—Toggles between **N** and **Y** for whether the questions and answers are copied into the **Comments** field on a service request.
21. **Use ArcGIS Data Model**—Toggles between **Y** and **N**. **Y** is for organizations using a geodatabase; **N** for ArcView 3x users using shapefiles and/or coverages. ArcView 3x users will need some additional formatting. These functions are accessible when the **ArcGIS** setting is **N** and the geodatabase checkbox on the login screen is unchecked.



22. **Include Cancelled Templates and Tasks in Searches**—Toggles between **Y** and **N** for allowing searches to be performed on cancelled request templates, work order templates, and tasks.
23. **Use Equipment Checkout**—Toggles between **N** and **Y** for users of the Cityworks Equipment Manager add-on.
24. **Use CCTV Codes**—Toggles between **N** and **Y** for users of Cityworks CCTV Interface for PACP.
25. **First Day of Week**—Select the day of the week from the dropdown list for the alphabetical first column of the popup calendar for selecting dates.

**NOTE:** *First Day of Week* only affects the popup calendar, not the scheduling of work orders.

26. **Use Dynamic Cost Codes**—Toggles between **Y** and **N** to use **Cost Codes** and/or **Job Codes**.

**TIP:** *Do not use dynamic cost codes if asset- or task-based costs are needed as they are not yet supported in Cityworks.*

Settings for the **Budget** tab on **Work Order Templates**:

27. **First Month of Fiscal Year**—Set the month beginning the organization's fiscal year from the dropdown selection of the alphabetized months.
28. **Default Workday Hours**—Type in the **Value** for the average crew workday.

29. **Default Applied Overhead Percent**—Type in the **Value** for the percent of overhead costs to apply to the work activity.
30. **Default Budget Range Years**—Type in the **Value** for the number of years prior to and following the upcoming budget year to list in the dropdown.

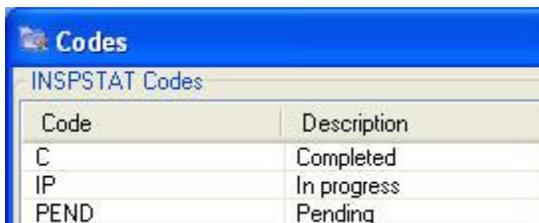
Description	Value	Default Value	Default Order
First Month of Fiscal Year	January	January	27
Default Workday Hours	8	8	28
Default Applied Overhead Percent	0	0	29
Default Budget Range Years	3	3	30
Geodatabase Asset Groups Owned by SDE	Y	N	31
Default Inspection Status - New			32
Default Request Caller Type			33
Auto format phone numbers	Y	Y	34
Use Request domain preferences for GIS layers first.	Y	Y	35
Number of system IDs to use during DataPump checkout.	1000	1000	36
Print Templates - network location.			37
Print Templates - last update.			38

Additional settings for all Cityworks users:

31. **Geodatabase Asset Groups Owned by SDE**—Toggles between **N** and **Y** for organizations using SQL Server which have set up SDE (Spatial Database Engine) as the owner of the asset tables (feature or object classes). Sites using a personal geodatabase mark **N** as well as sites using SDE with Azteca Systems Inc. or another user set up as the owner of the asset tables.

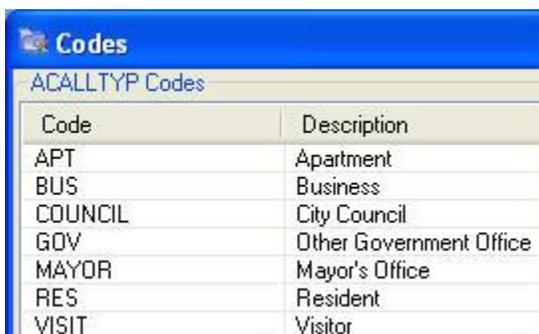
**NOTE:** Checking the box on the **Asset Group Definitions** window automatically changes the **Geodatabase Asset Groups Owned by SDE** to **Y** and vice versa since there is a dynamic link between the two.

32. **Default Inspection Status - New**—Select the default status for a new inspection from the **INSPSTAT Codes** box.



Codes	
INSPSTAT Codes	
Code	Description
C	Completed
IP	In progress
PEND	Pending

33. **Default Request Caller Type**—Select the default caller type for new requests from the **ACALLTYP Codes** box.



Codes	
ACALLTYP Codes	
Code	Description
APT	Apartment
BUS	Business
COUNCIL	City Council
GOV	Other Government Office
MAYOR	Mayor's Office
RES	Resident
VISIT	Visitor

34. **Auto format phone numbers**—Toggles between **Y** and **N** for automatically inserting the formatting for a standard American 7- or 10-digit phone number (the **Default Area Code** set above is added to all 7-digit numbers) when phone numbers are entered on a request.

**TIP:** *If outside the U.S., set the preference to **N** for **Auto format phone numbers**.*

Home Phone

Home Phone

35. **Use Request domain preferences for GIS layers first**—Toggles between **Y** and **N** for applying the domain settings for request **Submit To** and **Dispatch To** employees when requests are created for multiple domains. Changing the setting to **N** applies the domain settings of the person creating the request.
36. **Number of system IDs to use during DataPump checkout**—Set the number of system IDs (default is **1000**) in the **PWSysIDReserve** table to determine how many request and work order IDs are assigned to DataPump for creating new requests and work orders in the field.

**NOTE:** *When there are less than 50 IDs remaining, a new block of IDs is assigned to the DataPump user.*

37. **Print Templates - network location**—Double-click (or press the spacebar) to open the **Browse For Folder** box for navigating to the centralized location of the folder storing the custom print templates for Cityworks which can be accessed by each user. Click **OK** to load the path into the **Value** field.



Print Templates - network location.	Y:\Office\Staff\Karen Thomas\Templates
Print Templates - last update.	6/8/2009 12:51:06 PM

38. **Print Templates - last update**—Lists the current date/time when the checkbox for **Update 'Print Templates - last update.'** **To current date/time.** and the **Save** button is clicked to capture the date. The software compares this date to the one stored with the templates to use the newer print template.

**NOTE:** This checkbox must be checked each time a new service pack containing new templates is installed to refresh the date.

39. **Use server attachment structure**—Toggles between **Y** and **N**. Changing the setting to **Y** allows Server attachments to be viewed in Desktop.
40. **Cityworks Server Url**—To allow Server attachments to be viewed in Desktop, enter the Cityworks uniform resource locator (URL).
41. **External App**—Type in the name of an executable program. In Desktop, **Open External App** is added to the **Tools** dropdown on the work order form. This launches the external web application.



V201.2

The following options, beginning with Default Order #42, are specifically for Cityworks Server.

Server print output type	CRYSTAL	DOCX	42
Server Crystal Reports root directory	CRYSTAL	CRYSTAL	43
Server attachments root directory	D:\attachments\ _DOCS_KSMMS_C...		44
Server map default starting position	Split Window	Minimized	45
Server map scale bar large scale display units	Feet	Feet	46
Server map scale bar small scale display units	Miles	Miles	47
Server map scale bar switch display units threshold value	6000	6000	48
Server maximum number of records returned through search query	1000	1000	49
Server default layout folder	Default	Default	50
Server paging rows per grid	100	100	51
Server request tree text display.	Description	Code	52
Server equipment tree text display.	Code ~ Description	Code	53
Server material tree text display.	Code ~ Description	Code	54
Server task tree text display.	Code ~ Description	Code	55
Server Cityworks well known id (spatial reference)	102712		56
Server map image output pixel size	medium	medium	57
Server map image x buffer distance	2500	2500	58
Server map image y buffer distance	2500	2500	59
Server work order entity count gis flag	100	25	60
Server use radio buttons in custom inspection observations.	Y	N	61
Server gis model	REST	REST	62
Server Max New Page Open Work Activities	10	10	63

42. **Server print output type**—Toggles between **DOCX** and **CRYSTAL**. If you select .docx, requests, work orders, and custom inspections will be printed as Microsoft Word .docx files. The templates must be stored at ... \inetpub\wwwroot\ <site\_alias> \WebSite\PrintDocx. If you select Crystal, the

records will be printed as Crystal Report PDFs. The templates must be stored at ...\\inetpub\\wwwroot\\<site\_alias>\\WebSite\\PrintCrystal. Note that standard inspections will always print as Crystal Report PDFs.

43. **Server Crystal Reports root directory**—Displays the name of the folder where Crystal Reports are located, either **Crystal** or **Crystal Oracle** based on the type of database being used.

**NOTE:** *Server Crystal Reports Root Directory is for information only; no changes can be made to this field.*

44. **Server attachments root directory**—Type in the filepath for the folder where the Cityworks attachments are stored. For more information, see Knowledge Base article #[10630 Configuring Server Attachments](#) on mycityworks.com.

45. **Server map default starting position**—Select from the dropdown for:

- **Maximized** (full-size map/no Cityworks form)
- **Minimized** (map not visible/ full-size Cityworks form)
- **Split Window** (splits the screen vertically so both the form and the map are visible).

**NOTE:** *Minimized is the default setting for the Server map default starting position.*

46. **Server map scale bar large scale display units**—Use the dropdown selection for **Feet** (default), **Meters**, **Miles**, or **Kilometers** to select the units desired for when a small area of the map is viewed.

47. **Server map scale bar small scale display units**—Use the dropdown selection for **Feet**, **Meters**, **Miles** (default), or **Kilometers** to select the units desired for when a large map area is viewed.

48. **Server map scale bar switch display units threshold value**—The scale ratio used to switch from the large to small display units (from **Feet** to **Miles** if the defaults are used). The default setting is **6000** (1:6000 ratio).

**NOTE:** *The scale ratio 1:5280 is where 1 foot = 1 mile. (1:63360 for 1 inch = 1 mile).*

49. **Server maximum number of records returned through search query**—Set the maximum number of records returned through a search query. The user receives a warning that the maximum results have been reached so they know they may not have accessed all the records.

50. **Server default layout folder**—Enter the name of the folder which stores the modified .xml files when customizing the interface.

51. **Server paging rows per grid**—Specifies how many rows show up in a grid page when searching for items. The default setting is **100** per page.

52. |keyword=labor**Server request tree text display**—Select from **Code** (default), **Code~Description**, or **Description** to determine the hierarchy view for requests.

53. **Server equipment tree text display**—Select from **Code** (default), **Code~Description**, or **Description** to determine the hierarchy view for equipment.

54. **Server material tree text display**—Select from **Code** (default), **Code~Description**, or **Description** to determine the hierarchy view for materials.

55. **Server task tree text display**—Select from **Code** (default), **Code~Description**, or **Description** to determine the hierarchy view for tasks.
56. **Server Cityworks well known id (spatial reference)**—Enter the well known Id (WKID) for the map service. This preference is used for printing maps in work order, inspection, and request print templates. To find the WKID, open ArcGIS Services Directory and click on the map service being used.
57. **Server map image output pixel size**—Select from large, medium, or small.
58. **Server map image x buffer distance**—number of units from a center point on the X-axis. This determines how much of the map is included in the picture.
59. **Server map image y buffer distance**—number of units from a center point on the Y-axis. This determines how much of the map is included in the picture.
60. **Server work order entity count gis flag**—number of entities on a work order that get updated GIS values when the work order is opened. The default is 25. If the number of assets on the work order is greater than this number, none of the geodatabase values for the assets display on the work order. If the number of assets on the work order is less than this number and are all the same type, the geodatabase values for the assets will display on the work order.

**NOTE:** *If the assets on a work order are not all the same type, none of the geodatabase values display, regardless of the number of assets on the work order.*

61. **Server use radio buttons in custom inspection observations**—Change to **Y** to use radio buttons rather than dropdown menus for both branch and linear models. Default is set to **N**.
62. **Server gis model**—select either GEODATA, REST, or SOE. If GEODATA is selected, the two geodata fields are activated in the **Map and geocode service definitions** section under [GIS Services](#). REST and SOE use the same fields under GIS Services. The difference is that REST will look for GIS data through the various service URLs entered in GIS Services, and if the entity is not found, it will also try the SOE, if available. SOE skips all the REST entity search logic and goes straight to the SOE to look for GIS data.
63. **Server Max New Page Open Work Activities**—enter the number of open work activities to display when a user creates a new work order or inspection. Only work activities with the same description will be displayed. The default is 10.

## Email Settings Tab

The **Email Settings** tab sets up the automatic and manual email information for Cityworks to send internal email to designated employees within the organization and external email to callers. The emails can be sent at certain times, such as when service requests or work orders are created or closed, when a **Submit To** or **Dispatch To** person is changed, or when a work order is sent to the **Print Queue**. Internal emails are sent to both the **Submit To** and **Dispatch To** personnel set on the request or work order templates.

**TIP:** *If using the internal email option for **WO Print Queue** as the event, the number set for the **Days before Projected Start Date** set on the **Printing** tab of **Work Order Templates** determines when the **Submit To** person receives email notification that the work order is in the **Print Queue** and is ready for printing.*

To email callers, the customer's email address must be listed with the caller information on the request. It can be typed into the **Email** field (or if available may be stored in the **CustomerAccount** table so it loads

with the rest of the customer account information). Work order information can also be sent to a caller if a work order is created to resolve the problem.

**NOTE:** If an email address is found in the **CustomerCall** table and external emails selected as part of the **Preferences** settings, an email with the subject listed will be automatically generated and sent to the caller.

The screenshot shows a software interface with a toolbar at the top containing icons for a printer, a document, a search, and a location pin. Below the toolbar, the 'Incident Address' field contains '1061 E COVELL ROAD'. To its right, 'Locate Using:' has radio buttons for 'Streets' (selected) and 'Parcels'. The 'City/Zip' field is split into 'THOMASVILLE' and '84070'. Below this, 'Date/Time' is '12/11/2006 2:58' and 'Account' is '50200'. There are checkboxes for 'Mr' and 'Ms'. The 'First Name' field contains 'MARC' and the 'Last' field contains 'FIELDS'. The 'Address' field contains '1061 E COVELL ROAD'. Below that, 'City' is 'THOMASVILLE' and 'Zip' is '84070'. 'Home Phone' is '(801) 203-8255' and 'Work' is empty. 'Other Phone' is empty and 'Type' is 'R'. The 'Email' field contains 'marcfields@hotmail.com'. At the bottom, there is a 'Caller Information' field which is currently empty.

Default email templates are found in the **Cityworks > Templates** directory with these names: **SRInternal.doc**, **SRCaller.doc**, **WOInternal.doc**, and **WOCaller.doc**. Associated request information populates on internal and caller work order emails. If desired, the administrator may create customized email templates for internal and/or external service requests and/or work orders. For Cityworks Desktop, edit and save the existing default templates. The four **Custom Email Template** fields on the **Email Settings** tab apply only to Cityworks Server AMS. Set up these custom email templates in MS Word and save as **.doc** file type (rather than usual **.dot** template file) in the **Cityworks > Templates** directory. The name must be 8 characters or less. The **Description** can be up to 35 characters. To have information load with data from the database, type the field name in square brackets into the template where the information is wanted.

**NOTE:** See [Customizing Print or Email Templates](#) for more information.

The **.doc** file combines a macro to replace keywords with database values and saves it as an **.htm** file so it can be embedded into the email. Hence, the **Templates** directory will contain both a **.doc** and **.htm** file for each template following the initial email.

**NOTE:** **Custom Email Templates** fields apply only to Server users.

1. Switch to the **Email Settings** tab and select the desired domain.

**NOTE:** A brief description of the fields found in the **Account Settings** section can be found in the shaded panel on the right.

2. Type the reply to address in the **From** field.

**NOTE:** The **From** field must be a valid email account on the client's email server.

3. Type in the address of the email **Server** for the organization's IP or network location of the email server.

Preferences

Current Domain

**General** | **Email Settings** | Holidays

**Account Settings**

From:

Server:  Port:

User:  Password:

Use Authentication  Enable SSL

From: address from which the email will appear to be sent.  
 Server: IP or network location of email server  
 Port: port used for SMTP transactions (optional).  
 User: account used when connecting to the email server.

**Service Request Emailing**

**Internal**

Custom Email Template:

Event	Email Subject
<input checked="" type="checkbox"/> SR Created	New service request
<input checked="" type="checkbox"/> SR Submit To Change	Service request submitted.
<input checked="" type="checkbox"/> SR Dispatch To Change	Service request dispatched.
<input checked="" type="checkbox"/> SR Closed	Service request closed.

**Caller**

Custom Email Template:

Event	Email Subject
<input checked="" type="checkbox"/> SR Created	Service request created for your call.
<input checked="" type="checkbox"/> SR Closed	Request for service complete.

**Work Order Emailing**

**Internal**

Custom Email Template:

Event	Email Subject
<input checked="" type="checkbox"/> WO Created	New work order
<input checked="" type="checkbox"/> WO Submit To Change	Work order submitted.
<input checked="" type="checkbox"/> WO Closed	Work order closed.
<input checked="" type="checkbox"/> WO Print Queue	

**Caller**

Custom Email Template:

Event	Email Subject
<input checked="" type="checkbox"/> WO Created	Work crew assigned to handle yo...
<input checked="" type="checkbox"/> WO Closed	Work completed.

Save

4. Enter the number for the SMTP (Simple Mail Transport Protocol) **Port** on that server that accepts outgoing email connections.
5. Type in the portion of the email address entered in the **From** which comes before the @ in the **User** field from which emails are to be sent.
6. Enter the corresponding **Password** (for the **User**) for Cityworks to use to connect to the email server.
7. For external emailing: Check the box for **Use Authentication**. Not checking this box only allows internal emailing as the **User** and **Password** are not passed to the email server.
8. Check the box for **Enable SSL** (Secure Sockets Layer) to encrypt communications with the server.

**NOTE:** *SSL is required by most servers.*

9. In the sections for **Service Request Emailing** and **Work Order Emailing**, double-click in the **Email Subject** field for each **Event** where an email is wanted to open the **Enter an Email Subject** box.

**NOTE:** Double-clicking in the **Email Subject** field automatically checks the box in front of the **Event** so it is included.

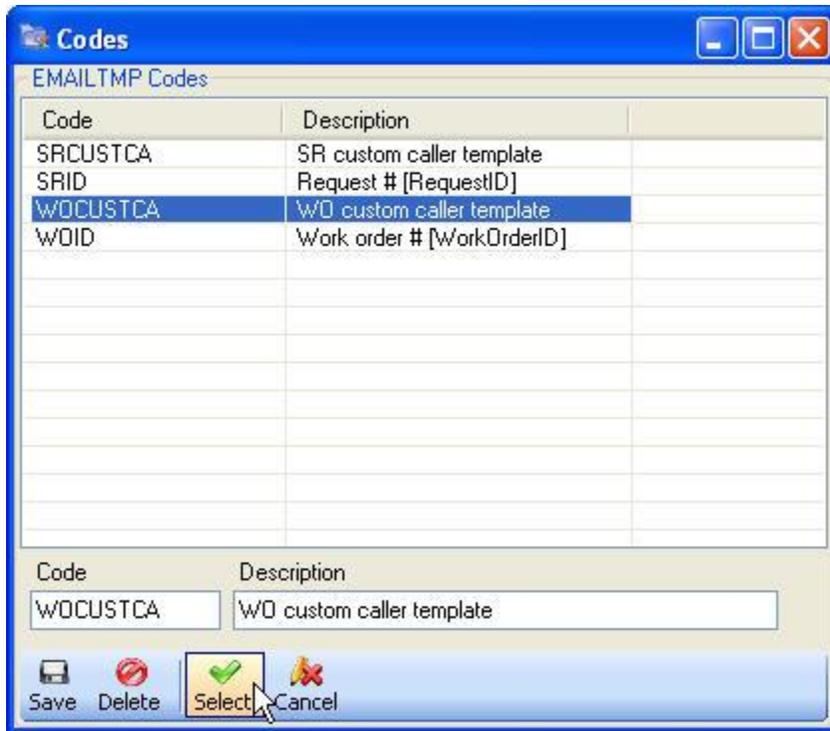
10. Type in the text for the **Subject** line of the email and click **OK** to load the **Email Subject** field.

**NOTE:** If data from a request or work order is wanted on the subject line, type the field name in square brackets to fill in the space with data from the database. For service requests, use **[REQUESTID]**, **[PROBADDRESS]**, **[PROBCITY]**, **[PRIORITY]**, **[PROBZIP]**, **[DESCRIPTION]**, **[PROBLEMCODE]**, or **[STATUS]**. For work orders, use **[WORKORDERID]**, **[WOADDRESS]**, **[DESCRIPTION]**, **[PRIORITY]**, **[LOCATION]**, or **[STATUS]**.



11. Custom email template fields for Cityworks Server AMS users only: To use custom email templates: Double-click in the **Custom Email Template** field to open a **Codes** box. Enter the custom template name and a **Description** of 35 characters or less. Click the **Save** button to save the code and click the **Select** button to load the code on the **Email Settings** tab.

**NOTE:** If the **Custom Email Template** is left blank, Cityworks uses the default email templates.



The **Email Word Templates** may also be populated in **Others > Codes > EMAILTMP**.



12. Click the **Save** button to save the information.

The tabbing sequence moves from left to right and top to bottom. For the **Emailing** panes, the cursor moves to the last **Email Subject** field in the list. Pressing the space bar opens the **Enter an Email Subject** box and checks the box in front of the **Event**. Type in the subject line, tab to the **OK** button, and press the **Enter** key to close the box and load the field. Use the up arrow key to move to the next **Email Subject** field. When the **Email Subject** fields are complete for the section, tab to the **Custom Email Template** field at the top of the section. Press the space bar if using a custom template to open the **Codes** box for defining and selecting the **Code**. Tab to the next set of **Email Subject** fields. From the last **Custom Email Template** field for the **Work Order Emailing: Custom Email Template** field for **Caller**, tab to the **Save** key and press **Enter** to save the information.

## Holidays Tab

The **Holidays** tab sets up a holiday schedule to avoid having cyclical work orders start on a holiday. Holiday schedules are defined by domain. Add all holidays to be skipped for cyclical work. The work orders are scheduled for the following work day.

1. Switch to the **Holidays** tab and select the domain.

Preferences

Current Domain: KSM

General | Email Settings | **Holidays**

Select a Holiday: Monday, January 14, 2013

Description:

Add Remove

Holiday	Description
1/1/2013	New Years Day
1/21/2013	Martin Luther King Day
2/18/2013	Presidents Day
5/27/2013	Memorial Day
7/4/2013	Independence Day
9/2/2013	Labor Day
11/11/2013	Veterans Day
11/28/2013	Thanksgiving Day
12/25/2013	Christmas

2. Select a date by clicking on the dropdown arrow at the end of the **Select a Holiday** field to open the calendar.
3. Type in the **Description**.
4. Click the **Add** button to list the holiday.
5. Add all holidays for the domain.

Update the holiday list each year.

**TIP:** Once a holiday is in the list, the same holiday can easily be added for the next year. Double-click on the holiday in the list to reload the fields, click on the year to access the up/down arrows, change the year, and click the **Add** button.

The organization may choose to keep the entire holiday schedule intact or may wish to delete holidays after a certain amount of time has elapsed. To delete, select the holiday(s) and click the **Remove** button.

## I/I Quantity Matrix for Smoke Testing

Define the categories for **Light**, **Medium**, and **Heavy** smoke amounts if custom values are wanted for smoke testing the inflow and infiltration defects found in wastewater and stormwater assets. If no custom values are entered for the **Leak Categories**, the default values are used on the **Smoke Test**.

The **Leak Categories** are found under the **Code: SLEAKCAT** in **Others > Codes > Asset Group: SEWER** or **STORM** when the **Code Format** is set to **Descriptions and Scores**.

**NOTE:** The **Description** and **Score** fields may be modified as desired by clicking on the desired **Description** to load it into the fields, making the changes, and clicking the **Save** button. New ones may also be added and old ones deleted as desired to meet the needs of the organization.

Codes

Current Domain PW

Add/Modify Import CCTV

Asset Group SEWER Code Format Descriptions and Scores

Code	Description
SBASECND	Observations of Manhole Base
SBNCHCND	Observations of Manhole Bench
SBRLCND	Observations of Manhole Barrel
SBSNCND	Basin Condition
SCHNLCND	Observations of Manhole Channel
SCONECND	Observations of Manhole Cone
SDETERIO	Deterioration Codes
SDPTHRNG	Leak Depth to Mainline
SDYESRC	Suspected Source of I/I
SFLOW	Observations of Manhole Flow
SFRMCND	Observations of Manhole Frame
SGRNDNCND	Observations of Ground Condition
SIANDI	Amount of Inflow and Infiltration
SINLTCND	Inlet Condition
SLEAKCAT	Locations of Leak
SLEAKSRF	Surface Cover at Leak
SLEAKTYP	Leak Source
SLIDCND	Observation of Manhole Lid
SMHCOND	Manhole Condition

Description	Score
A - In Drainage Channel	.0000
B - Storm Sewer Connect	.0000
C - Surface Drain Connect	.0000
D - Open Ended Pipe	.0000
E - Soil Fissure Connect	.0000
F - Roof Drain Connect	.0000
G - CO Plug Defect	.0000
H - CO Broken	.0000
I - Manhole Cover	.0000
J - Manhole Ring	.0000
K - Manhole Wall/Cone	.0000
L - Manhole Bench	.0000
M - Manhole Channel	.0000
N - Smoke Inside Building	.0000
O - No Smoke From Vent	.0000
P - Bypass	.0000
Q - Storm Connected Isolation	.0000
Crack <.05	1.0000
Crack >.05 >.1	2.0000

Code Type Description

SLEAKCAT Locations of Leak

Save Clear

Code Description

Save Clear

1. Select the **Leak Type** from the dropdown list.

Define I/I Quantity Matrix for Smoke Testing

Leak Type Leak Category

Crack in pipe Crack >1.0 <1.5

Light Medium Heavy

4.75 5.00 5.25

Save Delete

Leak Category	Light	Medium	Heavy
Crack <.05	.75	1.00	1.25
Crack >.05 >.1	1.75	2.00	2.25
Crack >.1 <.5	2.75	3.00	3.25
Crack >.5 <1.0	3.75	4.00	4.25

2. Select the **Leak Category** from the dropdown list.

**TIP:** You can type in the first letter and use the arrow keys to navigate through the list.

3. Type in the custom values for the ratings **Light**, **Medium**, and **Heavy**.
4. Click the **Save** button to save the information to the database and list it on the lower pane.

**NOTE:** To delete a **Leak Category** from the list, select it and click **Delete**.

5. Repeat steps 2-4 for each set of custom values needed for the selected **Leak Type**.
6. Repeat steps 1-5 for each **Leak Type**.

I/I values may be updated by double-clicking the item in the list to load the information back into the fields, making the changes, and clicking the **Save** button. Click **Yes** when the confirmation box opens to save the changes in the database.

## Map Layers and Fields

Define layer names and associated fields within the layer which can be used to assign **Submit To**, **Dispatch To**, or capture other data according to the location of the request. This information is automatically populated when the address is geolocated.

The map layer must be defined in ArcMap and may have a field containing an employee name used for **Submit To** or **Dispatch To** fields. The name format must be <**Last Name**>, <**First Name**> <**MI**>.

**NOTE:** These layers must exist in the map document.

1. Type in the **Layer Name**.

**TIP:** SDE users should only enter the feature class name, such as *POTHOLE* (not the fully qualified name, e.g., *SDE.POTHOLE*).

Map Layers and Fields

Layer Name: WATER      Field Name: ZONE 5      Save      Delete

Layer Name	Field Name
ANIMALCTRL	ACTRLAREA
ANIMALCTRL	SUBMITT01
ANIMALCTRL	SUBMITT02
ANIMALCTRL	SUBMITT03
POTHOLE	NAME
POTHOLE	SUBMITT01
POTHOLE	SUBMITT02
POTHOLE	SUBMITT03
SANITATION	SANITAREA
SANITATION	SUBMITT01
SANITATION	SUBMITT02
SANITATION	SUBMITT03
SERVICE	PAGE
SERVICE	SUBMITT01
SERVICE	SUBMITT02
SERVICE	SUBMITT03
STORMAREA	STRMAREA
STORMAREA	SUBMITT01
STORMAREA	SUBMITT02
STORMAREA	SUBMITT03
TRACT90	SUBMITT01
TRACT90	SUBMITT02
TRACT90	SUBMITT03
TRACT90	TRACTID
TRAFFIC	SUBMITT01
TRAFFIC	SUBMITT02
TRAFFIC	SUBMITT03
TRAFFIC	TRAFAREA
WATER	ZONE 1
WATER	ZONE 2
WATER	ZONE 3
WATER	ZONE 4

2. Type in the **Field Name**.
3. Click the **Save** button to list and save the information in the database.

## Customer Accounts

Customer account with its related address and personal data can be set up to populate the request data fields associated with a customer call. This information is accessed by typing in part or all of the **Last Name**, **Address**, or **Account Number** on the request.

### Edit/Add Customer Account Tab

The **Edit/Add Customer Account** tab tracks customer data and can be used to add new customer data as well as update existing information. Use a query to open the existing records and update the information.

A search may be performed prior to entering a new customer to verify that the customer is not already in the database.

To add a new customer, follow these steps:

1. Type in the **Account** number.

**NOTE:** **Account** is a required field. However, the gray **AcctSID** (Account System ID) field cannot be entered or edited as it is system-generated when the information is saved.

The screenshot shows a software window titled "Customer Account Data" with several tabs: "Edit/Add Customer Account", "Import Customer Accounts", and "Import Street Names". The "Edit/Add Customer Account" tab is active, displaying a form with the following fields:

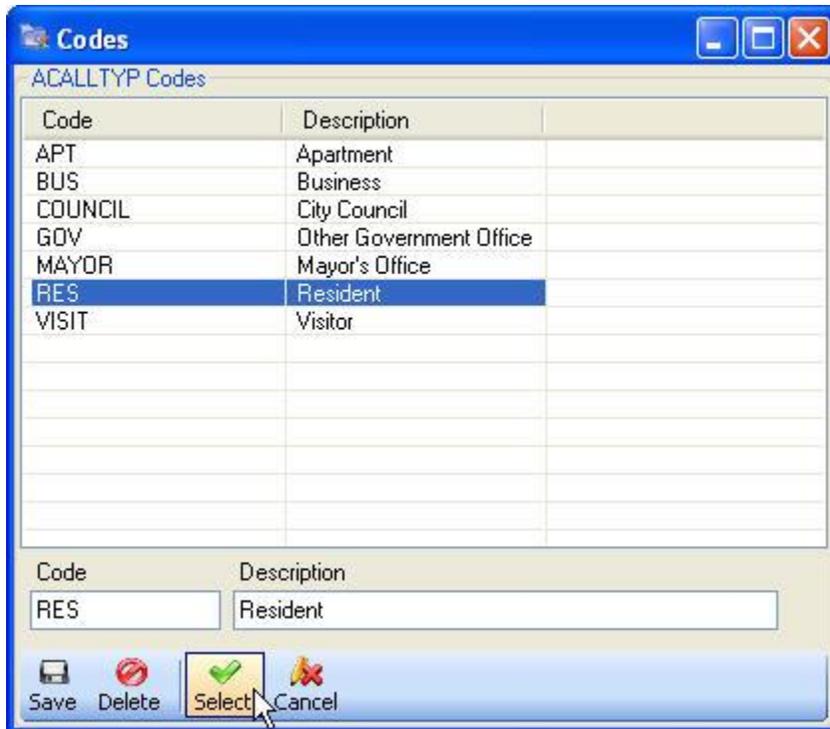
- AcctSID: 30043 (grayed out)
- Account: 90162
- Account Type: RES
- Mr.  Ms.
- First Name: WILLIAM
- Last Name: JOHNSON
- Address: 1901 SANTA FE
- City: THOMASVILLE
- State: [empty]
- Zip: 84070
- Home Phone: (801) 877-3533
- Cell Phone: (801) 891-1261
- Comments: Works in the mayor's office.

Below the form is a toolbar with "Save", "Clear", "Search", and "Delete" buttons. A status bar indicates "Query returned 3 record(s)".

The "Results" section contains a table with the following data:

AcctNum	Last Name	First Name	Middle Initial	Title	Address	AptNum	City	State	Zip	D
50001	JOHNSON	DANIEL	J	MR	1485 E COVELL ROAD		THOMASVILLE		84070	
72933	JOHNSON	ROYAL	S	MR	1676 E GEBRON DR		THOMASVILLE		84070	
90162	JOHNSON	WILLIAM	L	MR	1901 SANTA FE		THOMASVILLE		84070	

2. Select the **Account Type** from the popup **Codes** box.



3. Check the box for **Mr.** and/or **Ms.**
4. Enter the **First Name**, middle initial, and **Last Name**.
5. Enter the **Address**, **Apt.** number, **City**, **State**, **Zip** code, and **District** (if applicable).
6. Enter the **Email** address.
7. Enter the **Home Phone**, **Work Phone**, **Cell Phone**, **Other Phone**, and/or **Fax**.
8. Enter any **Comments** about the customer that may be helpful.

**NOTE:** Public records may be requested by a number of sources, including the individual customer, so keep that in mind when adding **Comments**.

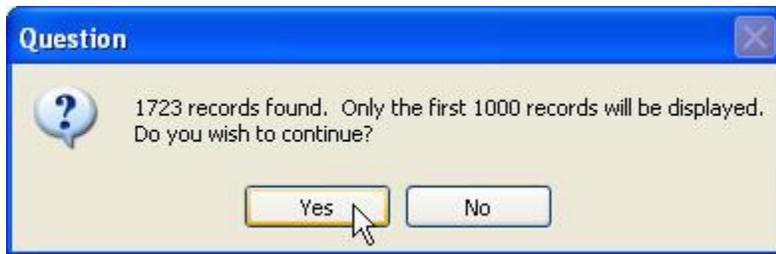
9. Click the **Save** button.
10. Click **Yes** when the confirmation box opens to add the new account.

Customer details may be updated by doing a search and changing or adding the applicable information.

To edit a customer's information, follow these steps:

1. Enter the desired search parameters in any of the fields and click the **Search** button. The number of records matching the query is listed to the right of the **Comments** field unless there are a large number of matching records. Then a message box opens telling how many records there are. Only a 1000 will load at a time.

**NOTE:** A progress bar is found at the bottom of the tab.



Wildcard searches are also allowed if only part of the information is known.

Customer Account Data

Edit/Add Customer Account Import Customer Accounts Import Street Names

AcctSID Account Account Type  Mr. First Name Last Name  
 Ms. %COPY%

Address Apt.  
 City State Zip District Email  
 Home Phone Work Phone Cell Phone Other Phone Fax  
 Comments

Save Clear Search Delete Query returned 3 record(s).

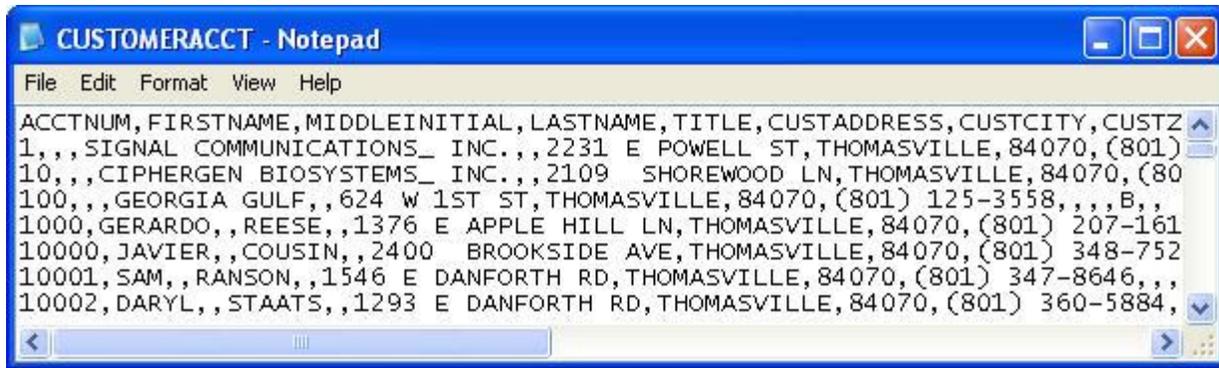
Results

AcctNum	Last Name	First Name	Middle Initial	Title	Address	AptNum	City
12787	THE COPY CENTER				1915 N BLOSSOM HILL ROAD		THC
13258	LABAR DATA INC PRINTING & COPY CE				1935 E CABILERO ROAD		THC
20837	COPYTELE, INC.				1728 N THOMAS DR		THC

2. Double-click on a record in the list to populate the fields, update the fields as needed, and click the **Save** button.
3. When the confirmation message opens, click **Yes** to update the account listed.

## Import Customer Accounts Tab

The **Import Customer Accounts** tab imports existing customer data from a delimited text file where the first row lists the field names and loads the information into the **CustomerAcct** table in the Cityworks database. Using this function allows the organization to use an existing file to load the data, rather than having to add each customer in one at a time.

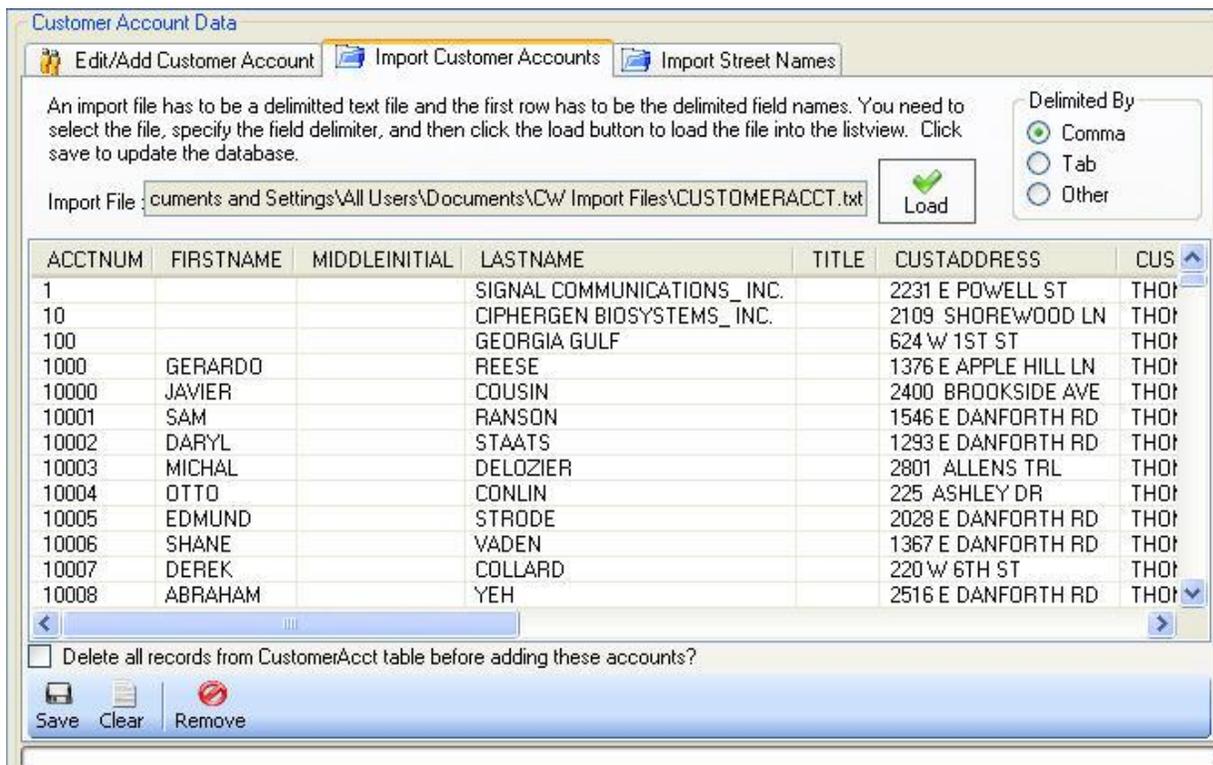


**IMPORTANT:** Any row with a blank **ACCTNUM** (Account Number) field will not be saved to the Cityworks database as this is a **Not Null** field. **ACCTNUM** is the only required field.

Multiple files may be added using the same steps; however, each file must be loaded into the list for viewing and then saved to the database using the **Save** button at the bottom of the form before loading another list. Saving the list clears the fields so it's ready to import another file. Any existing list is cleared when the **Load** button is clicked to import another file so there's no way to append files together before saving.

If a file has already been imported, it will add additional records to the Cityworks database for each row containing an account number, even if the information is identical to the information already there.

**TIP:** Use the **Edit/Add Customer Account** tab to search for records to see if a file has already been imported.



1. Click in the **Import File** field to open the box for browsing to the file.
2. Navigate to the desired file and click **Open** to load the path in the **Import File** field.

3. Select the radio button option for **Delimited By**. See the description under [Importing Data](#).
  - **Comma**
  - **Tab**
  - **Other**
4. Click the **Load** button and wait while the data loads into the fields. A progress bar displays at the bottom of the window.
5. Verify each record contains an **ACCTNUM** value or the row will not be saved to the Cityworks database.

**NOTE:** Any row missing an **ACCTNUM** value is ignored when saving information to the database and that customer will not be added.

6. Optional: Select any record(s) not wanted for importing into the database and click the **Remove** button to remove them from the list.

**NOTE:** The **Clear** button clears all the information from the list.

7. Optional: Uncheck the box for **Delete all records from CustomerAcct table before adding these accounts?** to keep the data that already exists in the CustomerAcct table.

**IMPORTANT:** If the checkbox for **Delete all records from CustomerAcct table before adding these accounts?** is checked, all current information in the Cityworks **CustomerAcct** table is deleted before adding the new information from this list. This process may take some time depending on the number of records being deleted and then added. To append the new information to the existing information, this checkbox must be unchecked.

8. Click the **Save** button to add the information to the **CustomerAcct** table in the Cityworks database and clear the list.

## Import Street Names Tab

Before using the **Import Street Names** tool, delete any existing records in the **StreetCode** table from the Cityworks database. This eliminates the possibility of duplicate and extraneous data when records are loaded through Designer.

**NOTE:** It is not necessary to delete existing records in the table if there is a script which appends only new streets to the table.

The **Import Street Names** tab imports existing street data from a delimited text file with these fields:

- **StreetName**
- **Code**
- **City**
- **Zone**
- **District**
- **State**

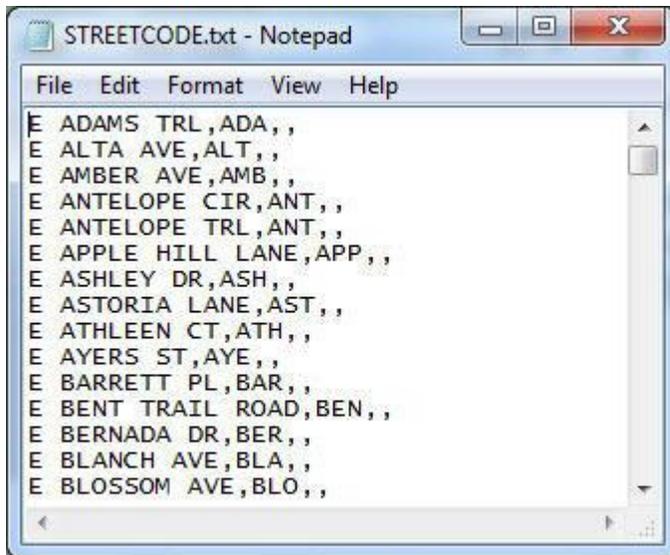


Figure 1

To create the list, export the street name list from the GIS database into a delimited text file (comma, tab, or other). The **StreetName** and **Code** fields must be populated. The other fields allow null values; no place holders are needed for them in the file and they can be blank in the list.

If there are multiple files containing street information, these must be loaded on the form one at a time where all the rows can be viewed and then saved to the database using the **Save** button at the bottom before navigating to another file and loading new information.

***IMPORTANT:*** Attempting to load a new file when information is already loaded but not yet saved, overwrites the current information with the new information.

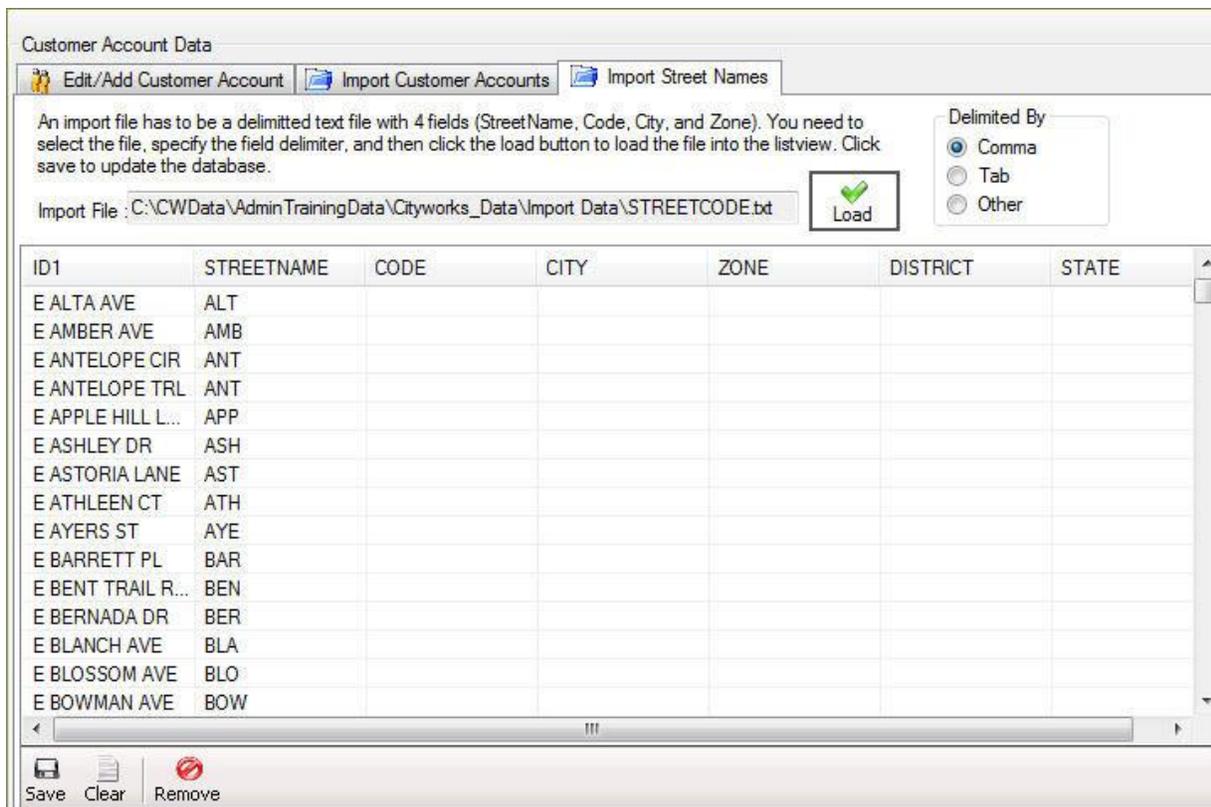


Figure 2

1. Double-click in the **Import File** field to open the box for browsing to the file.
2. Navigate to the desired file and click **Open** to load the path in the **Import File** field.
3. Select the radio button option for **Delimited By: Comma, Tab, or Other**.
4. Click the **Load** button and wait while the data loads into the fields.
5. Verify a **StreetName** and **Code** are populated for each record or the row will not be saved to the Cityworks database. An error message opens to alert the user that either the **StreetName** or **Code** is required.

**NOTE:** Any row missing a **StreetName** and/or **Code** is ignored when saving information to the database and that customer will not be added.

6. Optional: Select any record(s) not wanted for importing into the database and click the **Remove** button to remove them from the list.

**NOTE:** The **Clear** button clears all the information from the list.

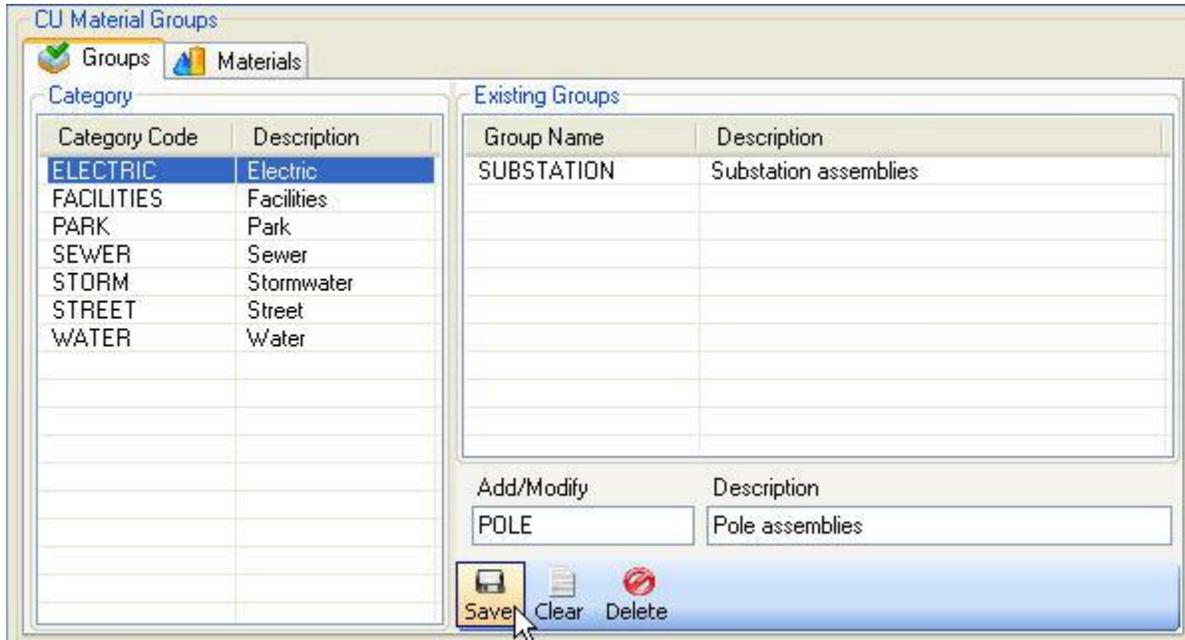
7. Click the **Save** button to add the information to the **StreetCode** table in the Cityworks database and clear the list.
8. Click the **Save** button to add the information to the **CustomerAcct** table in the Cityworks database and clear the list.

## CU Material Groups

**CU Material Groups** are used by the Miner & Miner Designer application for in-house assembly of materials with various parts. These material groups, referred to as “favorites,” are defined here and the assemblies can be stored together or the parts used separately.

### Groups Tab

The **Groups** tab sets up the names and descriptions for groups in each asset group.



1. Select the **Category** from the list on the left pane.
2. Type the **Group Name** in the **Add/Modify** field at the bottom of the right pane, 20 characters maximum.
3. Type in the **Description**, up to 250 characters.
4. Click the **Save** button to add the group to the **Existing Groups** list on the right pane and to the database.

**NOTE:** To delete a group, double-click on it in the list to load the fields, click **Delete**, and click **Yes** when the confirmation box opens.

5. Repeat steps 2-4 for any additional groups in the selected **Asset Group**.
6. Repeat steps 1-5 for groups in other asset groups.

### Materials Tab

The **Materials** tab is used to place the materials into the groups.

1. Switch to the **Materials** tab.

The screenshot shows the 'CU Material Groups' application with the 'Materials' tab selected. The interface is divided into several sections:

- Groups Pane (Left):** Contains two tables. The top table lists 'Category Code' and 'Description' with entries like ELECTRIC, FACILITIES, PARK, SEWER, STORM, STREET, and WATER. The bottom table lists 'Group Name' and 'Description' with entries like POLE and SUBSTATION.
- Materials Search Pane (Top Right):** Features a 'Search by' dropdown menu set to 'KEYWORD' and a search input field containing 'POLE'.
- Materials List (Center):** A table with columns 'ID', 'Description', 'Manufacturer', and 'Su'. It lists various materials such as ELCBRACE, ELCCRSARM, ELCINSULATOR, and PT354. The row for 'PT354' is highlighted in blue.
- Quantity and Primary Material (Bottom Left):** A 'Quantity' input field with the value '1' and a checked 'Is Primary Material' checkbox.
- Add and Remove Buttons (Bottom Center):** Two buttons labeled 'Add' (with a green checkmark) and 'Remove' (with a red X).
- Assembly List (Bottom):** A table showing the current assembly components:
 

Group Name	MaterialUID	Quantity	Primary
POLE	ELCBRACE	1	N
POLE	ELCINSULATOR	1	N
POLE	ELCCRSARM	2	N

2. Select the **Category Code** from the top left pane to load the associated **Group Name** pane.
3. Select the **Group Name**.
4. Select the **Search by** field from the dropdown selection on the top right pane: **Keyword, Name, or Hierarchy**.
5. Select the material from the list.
6. Type in the **Quantity** needed to build the assembly.
7. If the material is the primary part of the assembly, check the box for **Is Primary Material**.
8. Click the **Add** button to list the material.
9. Repeat steps 4-7 for each additional material that belongs to the same assembly until each material is added.
10. Repeat steps 1-8 to define each group of materials.

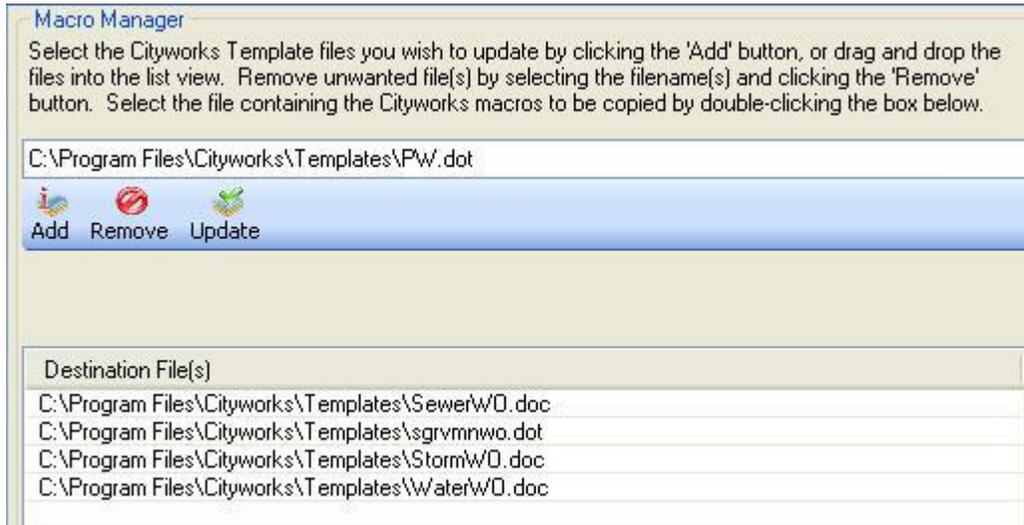
## Macro Manager

The **Macro Manager** function copies the macros, in this case the printing instructions, for custom templates for email, requests, or work orders when a new version of Cityworks is installed where the macros were

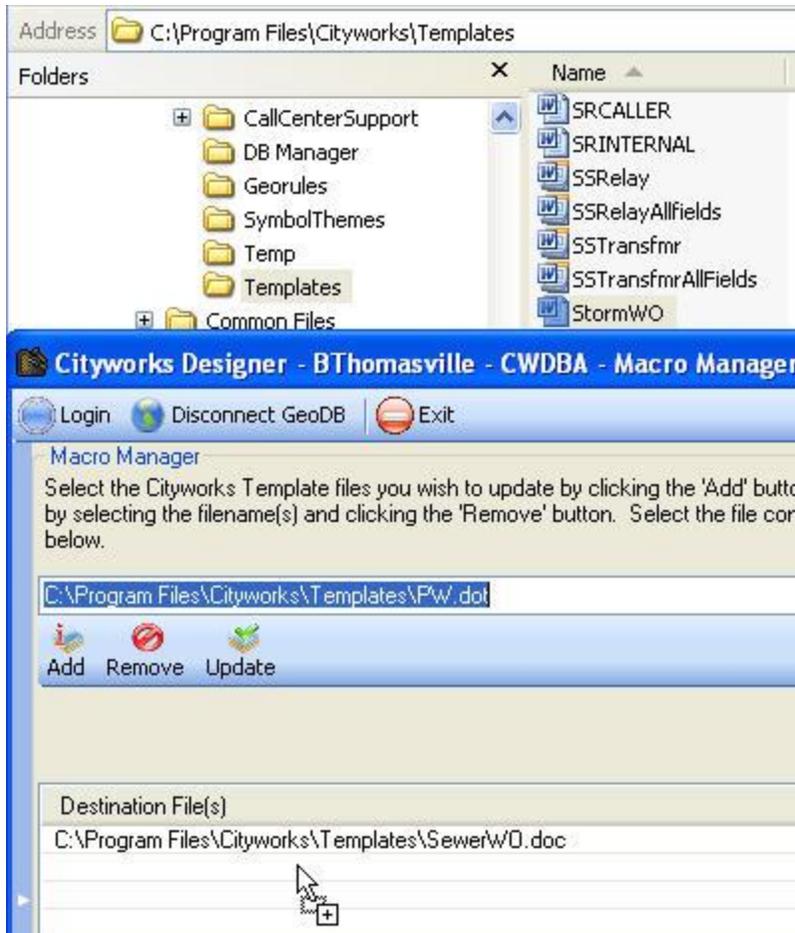
changed. New macros are read from the new Cityworks template and applied to the selected custom templates so the data loads correctly.

**NOTE:** *Macros are a list of commands Cityworks uses to perform a series of actions for emailing and printing requests or work orders which link the stored data to variable fields.*

1. Load the fields to select the files to copy the macros from (source file) and to (destination file).



- Browse to the desired file(s) in **Program Files > Cityworks > Templates** and drag to load either the source file or destination file.



- Double-click in the source file field or click **Add Files** to open the box for navigating to the file. Select the desired file(s) and click **Open** (or double-click on the desired file) to load the file.

**NOTE:** Multiple templates may be selected as destination files by using the **Shift** or **Ctrl** key.

2. Verify that the source and destination files are either request or work order files and remove any unwanted file(s) by selecting and clicking the **Remove** button.

**NOTE:** Different macros are used for requests than for work orders. Do not copy macros from a service request template to a work order template or vice versa.

3. Click the **Update** button to copy the macros to the fields.
4. Click **Yes** when the confirmation box opens to update the macros for the selected files. The progress displays in the space below the buttons path until the update is complete.

The **Destination File(s)** are removed once the macros are updated and the message in the space below the buttons and above the **Destination File(s)** list changes to read **Update Complete**.

## Record Lock

The **Record Lock** function is a convenient way for the Cityworks domain administrators to remove locks on service requests and/or work orders. It links directly to the **PwRecordLock** table in the Cityworks database,

listing information about requests and/or work orders that are currently open. Removing the lock allows another user to open and edit a record. This function allows locked records to be opened for processing and closed.

**NOTE:** Be sure not to remove locks from work orders that are currently being accessed by a user to prevent changes from being made by another user at the same time. The date/time of the lock is included to see which records may have been left open.

**IMPORTANT:** Requests and work orders currently checked out using DataPump are listed in the **LockedBy** column as the user name followed by **\_dp** and should not be deleted as the records will not be able to be checked back into the production database.

1. Select the **Current Domain** from the dropdown selection.



2. Select the service request(s) and/or work order(s) to remove from the table and allow users to access them, using **<Shift + click>** or **<Ctrl + click>** for multiple selections.
3. Click the **Unlock** button to remove the lock.

**NOTE:** **Unlock** does not delete the record; it only removes it from the **PwRecordLock** table.

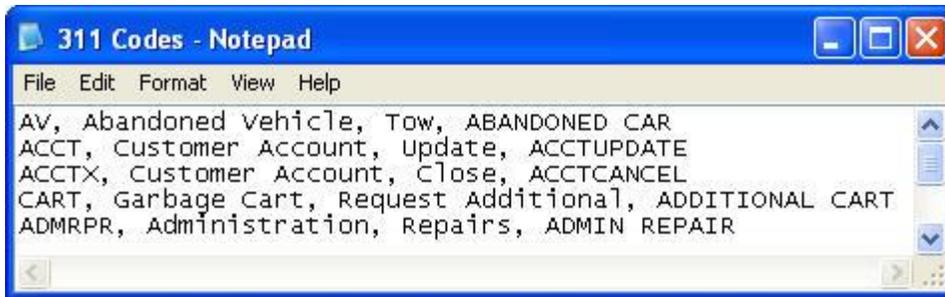
4. Click **Yes** when the confirmation box opens to unlock the selected record(s) and remove them from the list.

**NOTE:** The **Refresh** button can be used to refresh the list without having to log in to Designer again as it goes back to the **PwRecordLock** table to list all the requests and work orders currently being used.

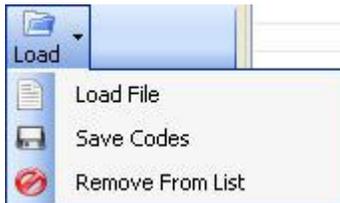
## Other System Codes

**Other System Codes** allows the administrator to relate a **Code** and up to two descriptions from another system, like 311, to a Cityworks request template. The mapping may be done by entering the information or importing a file.

The import file may contain up to three fields for the other system codes: its **Code**, **Description 1**, and **Description 2**. The corresponding Cityworks **Request Template Code** may be added as a fourth field or it may be quickly added to the imported information on the window selecting from the dropdown list. A 1:1 correspondence is required so each Cityworks request template may only be used once. Each **Code**, **Description 1**, and **Description 2** combination must be unique.



1. If importing a file, select the radio button for the **Delimiter** used in the import file.
  - **Comma**
  - **Tab**
  - **Other**—Specify the delimiter in the box that opens when this option is selected. A semi-colon is the default.
2. Use the **Load** dropdown **Load File** option to open a browser.



3. Navigate to the file when the **Select Other System Code File** box opens.
4. Click on a **Code** in the list to load the information into the fields at the top or type in the **Code** along with up to two descriptions (**Description 1** and **Description 2**).

**TIP:** If the imported information already contains the Cityworks **Request Template Code**, select the desired codes in the **File Codes** list (or select the ones to remove and use the **Remove From List** option in the **Load** dropdown to eliminate any codes not needed first) to transfer to the **Defined Codes** list on the right pane and use the **Save Code** option in the **Load** dropdown to save the **Defined Codes**. Skip the remaining steps if using this option.



# Cityworks Data Template

The Cityworks Data Template is a specialized Excel interface that links directly to the Cityworks database for editing multiple values. It is ideal for setting up a new Cityworks database or editing an existing one.

**NOTE:** Since request and work order templates require much more setup than can be done on the **ProblemLeaf** or **WOTemplate** tables, most editing will need to be done in Designer.

## Logging into the Database

The Cityworks Data Template is found on the <ftp://ftp.cityworks.com/> site. Contact Azteca Systems Inc. client support staff for login instructions. Only Cityworks domain administrators or superusers can log in to this application.

1. Download a copy of the **Cityworks Data Template** from the ftp site.
2. Double-click on the **CityworksDataTemplate** in the saved location to access the **Cityworks Login** dialog box.

**NOTE:** Once the Cityworks Data Template is open, the **Cityworks Login** screen can be accessed from the **Load Cityworks Table Menu** option found in the context menu which opens by right-clicking in a cell, allowing the user to switch tables.

Name	Type	Packed Size	H...	Size	Ratio	Date
 CityworksDataTemplate	Microsoft Excel Worksheet	193 KB	No	487 KB	61%	4/13/2007 5:25 PM
 CityworksExcelTemplate(4.3)	Microsoft Word Document	429 KB	No	4,718 KB	91%	1/3/2006 4:15 PM

If a **Security Warning** box opens instead of the login screen, click **Enable Macros**.

**NOTE:** If the **Cityworks Login** screen doesn't open, refer to [No Login Screen](#) for how to change the **Macro > Security** setting.

3. Enter the **User ID** and **Password**. Domain administrators may access all the tables. A superuser can only access the employee table. If a superuser tries to open another table, a **Login Error** opens. Clicking **OK** returns the superuser to the login screen.
4. Select the Cityworks **Database** from the dropdown listing the computer's available ODBC connections.

Cityworks Login

Verion 1.7

User ID: pw

Password: \*\*

Database: BThomasville

Table: ProblemLeaf

Advanced

OK Cancel

Select \* From Azteca.ProblemLeaf

Where

ProblemSID > 387

Order By

ProblemCode Desc

5. Select the desired **Table** from the dropdown list of predefined Cityworks tables that the template is designed to access.
  - **ContractorLeaf**
  - **Employee**
  - **EquipmentLeaf**
  - **MaterialLeaf**
  - **ProblemLeaf**
  - **TaskLeaf**
  - **WOTemplate**

**NOTE:** The columns, field types, number of characters, and other instructions are listed for each template in [Appendix 2: Cityworks Data Template Fields](#).

6. Optional: For more advanced login options, check the **Advanced** box to enable the additional SQL query options for **Where** and **Order By**. Type the query in the **Where** field and the desired column(s) for sorting the results in the **Order By** field.
7. Click the **OK** button to log in and load the information from the selected table or data matching the advanced SQL query into Excel.

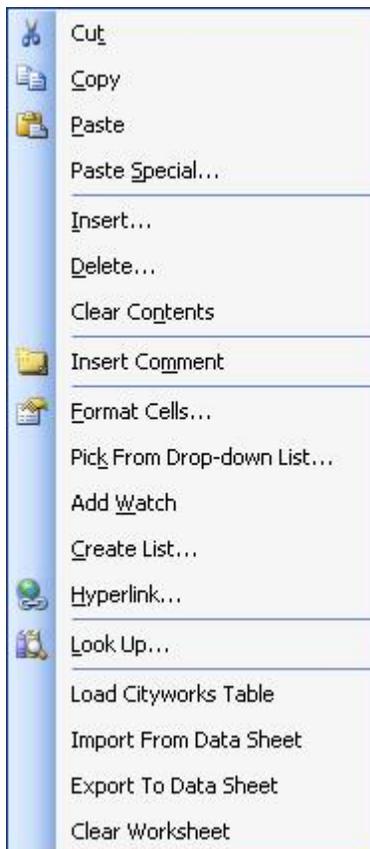
	A	B	C	D
1	<b>ProblemLeaf</b>		Database: BThomasville	UserID: pw
2	<b>PROBLEMSID</b>	<b>PROBLEMCODE</b>	<b>DESCRIPTION</b>	<b>PRIORITY</b>
3	10222	YDPICKUP	YARD WASTE PICKUP REQUESTED	3
4	9933	YARD OVERGROWN	YARD OVERGROWN-NEEDS CUT	3

8. Enter, review, update, or delete data as discussed in the following sections.

## Menu Options

There are six menus associated with the Cityworks Data Template. Right-clicking in a cell opens this context menu for these four options.

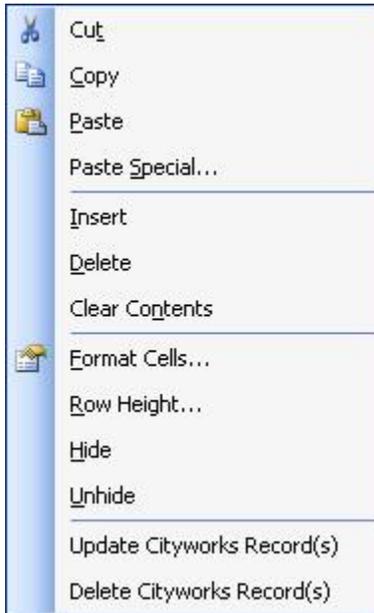
- **Load Cityworks Table**
- **Import From Data Sheet**
- **Export to Data Sheet**
- **Clear Excel Data**



The other two options are accessed by first highlighting the information to update or delete and then right-clicking to open another context menu.

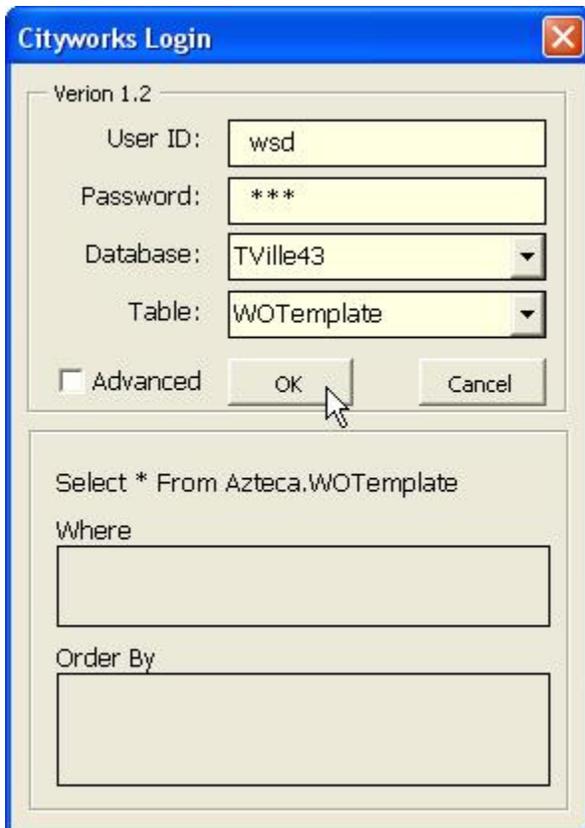
- **Update Cityworks Record(s)**

- **Delete Cityworks Record(s)**



## Load Cityworks Table

The **Load Cityworks Table** menu allows access to the **Cityworks Login** screen to switch between the Cityworks tables.



**IMPORTANT:** Loading a table removes any previous table data from the template. Make sure all changes are updated in the database before loading another table. See [Update Cityworks Record\(s\)](#) for more information.

1. Right-click in any cell and select the **Load Cityworks Table** option from the context menu.
2. Enter the **Password** when the **Cityworks Login** screen opens.

**NOTE:** The cursor is set in the **Password** field on the login screen when the **Load Cityworks Table** option is selected.

3. Change to the desired **Table**.
4. Click **OK** to open the new table.

## Import From Data Sheet

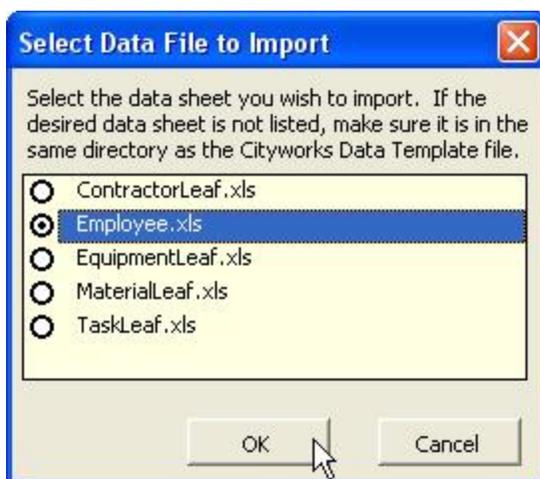
A copy of the template can be made and exported to a data sheet to allow other users to make updates to the information without changing the information in the Cityworks database. These data sheets can then be imported back into the Cityworks Data Template using the **Import From Data Sheet** menu option. Any changes are displayed in green text so the domain administrator can review the information and commit the changes to the database or discard them. See the following section, [Export To Data Sheet](#), for information on how to create the data sheet.

1. Right-click in a cell and select the **Import From Data Sheet** option from the context menu.

**NOTE:** If opening the template, click **Cancel** on the **Cityworks Login** screen to avoid having to log in twice.

2. Select the desired radio button option for the data sheet to import from the **Select Data File to Import** list.

**NOTE:** Only data sheets located in the same directory as the template are listed. When receiving the data sheets back, store them in the **Cityworks** directory with the **Cityworks Data Template** file.



3. Enter the **User ID**, **Password**, and **Database** to log in into the main Cityworks database when the **Cityworks Login** screen opens. The **Table** and **Advanced** checkbox are grayed out as they are based on which data sheet was selected.

Cityworks Login

Version 1.7

User ID: pw

Password: \*\*

Database: BThomasville

Table: Employee

Advanced OK Cancel

Select \* From Azteca.Employee

Where

DomainID=1

Order By

LastName

4. Click **OK** to load the table data. As the data loads, each cell is checked against the data sheet for changes. Cell values changed in the data sheet are displayed in green, unchanged cells remain black, and any row in another font color retains that font color.

**NOTE:** New records are added after the last entry in the data sheet.

	A	B	C	D	E	F
1	<b>Employee</b>					
2	<b>EMPLOYEESID</b>	<b>EMPLOYEEID</b>	<b>FIRSTNAME</b>	<b>MIDDLEINITIAL</b>	<b>LASTNAME</b>	<b>TITLE</b>
3	5744	21138	CHARLIE		BAXTER	Storm Supervisor
4	11930	20225	WENDY	S.	DAVIS	Call Taker
5	4031	21238	BOBBY	D	GUNTER	Water Supervisor
6	11934	00001	BRIAN	L	HASLAM	President
7	5885	20221	JOHN	F	HASSLEBACK	Call Taker
8	5886	20223	MICHEAL	R	JONES	Call Taker
9	5759	21038	FREDERICK	J	LARSEN	Sewer Supervisor
10	5754	21142	JIM	B	MARSHALL	Storm Maintenance Worker 2
11	4035	21042	TOM	A	MESSER	Sewer Maintenance Worker 2
12	5884	20224	SUSAN	J	MILLER	Call Taker
13	5762	21241	GUY	F	ROBERTS	Water Maintenance Worker 1
14	7890	10	AZTECA		SYSTEMS	Superuser
15	12009	5	STEVE		THOMAS	WSD Supervisor
16	5743	21141	RUSSELL	D	VALENZY	Storm Maintenance Worker 1
17	5764	21242	FRANK	D	WADE	Water Maintenance Worker 2
18	5887	20200	WSD		WSD	Domain 2 Administrator
19		21041	DAVID	B.	JOHNSON	Sewer Maintenance Worker 1

- Review the data and edit current values directly. If records need to be deleted, highlight the record(s) in a font color other than blue, red, green, or black.
- Select the desired changes to add to the database, holding down the **Shift** or **Ctrl** key to make multiple selections.

**NOTE:** Use **<Shift + click>** for consecutive selections or **<Ctrl + click>** for individual selections.

- Right-click to open the context menu and select the **Update** option to update the Cityworks database with the selected information.
- Review the data and select any items for deletion and use the right-click context menu to select the **Delete** option to delete the selected data from the database. See [Delete Cityworks Record\(s\)](#) for more information.

**NOTE:** Perform update changes to the database before deletion changes.

## Export To Data Sheet

The **Export To Data Sheet** function creates a static copy of the data displayed in Excel for allowing the Cityworks domain administrator to permit any user to edit the data without altering the actual Cityworks database.

- Load the desired table into the template.
- Right-click in a cell to open the context menu and select the **Export To Data Sheet** option.
- An Excel file **<TableName>.xls** is created in the same directory as the template containing the current information in the data template.

**NOTE:** The table name, SQL query used to extract data from the main database, validations, lists, and codes from the template are saved with this data sheet.

Once the file is created, a message opens to inform the user, unless a data sheet has already been created. Then another message box opens to ask if the user wants to replace the current file. Click **Yes** to save the most recent data template or one with a different SQL query.

If a SQL query was used to create the data sheet, it is listed at the top of the data sheet.

	A	B	C	D	E	F
1	<b>Employee</b>	Select * From Azteca.Employee Where DomainID = 2 And DomainID=2 Order By LastName				
2	<b>EMPLOYEESID</b>	<b>EMPLOYEEID</b>	<b>FIRSTNAME</b>	<b>MIDDLEINITIAL</b>	<b>LASTNAME</b>	<b>TITLE</b>
3	5744	21138	CHARLIE		BAXTER	Storm Supervisor
4	11930	20225	WENDY	S.	DAVIS	Call Taker

- Send the data sheet to the desired user(s) to update the data with instructions to return it after making the necessary changes.
- When the data sheet is returned, the Cityworks domain administrator imports the data and commits the desired changes to the actual tables. See the section [Import From Data Sheet](#) for more information.

## Clear Worksheet

The **Clear Excel Worksheet** clears the Excel spreadsheet of any data preparatory to importing a table. Right-click in any cell to open the context menu and select the **Clear Worksheet** option.

## Update Cityworks Record(s)

To update records from a data sheet, see the section [Import From Data Sheet](#).

**NOTE:** Charts for each of the data templates can be found in [Appendix 2: Cityworks Data Template Fields](#).

- To add, update, or delete Cityworks data, enter data into the desired cell. An input message box displays information to aid data entry. **NULL** means that the field may be left blank; **NOT NULL** fields must have a response entered.

**NOTE:** Data validation occurs for each cell as data is entered.

- Text—Provides requirements for entering **varchar** (varying-character or alpha-numeric) text with the maximum number of characters listed in parenthesis.

PROBLEMSID	PROBLEMCODE	
5659	NO WATER	N
5660	LEAK	
5662	LOW PRESS	[varchar] (20) NOT NULL (Required for new entries)
5669	INLET BACK	
5670	CHANNEL B	
5671	CULVERT BACKUP	B

**NOTE:** If a number is inserted into a **varchar** field, a triangle is inserted into the corner of the field by Excel, indicating that Excel wants to format the field as a numeric field. The data loads correctly into the Cityworks database.

MODEL
G1600
6800
L37-HTC
W500
[varchar] (20) NULL

- **Numeric fields**—The first number in parenthesis lists the possible number of places to the left of the decimal point and the second number lists the number of decimal places.

[numeric] (5, 2) NULL
--------------------------

- **Select from list**— Select from the list of valid values.

SUBMITTO	PROBCATEGORY
4031	WATER
NULL	WATER
4009	WATER
4031	WATER
5737	FORM
5744	FORM
5759	FORM
5773	FORM
5867	FORM
5744	STORM

If the selection lists numeric codes which are not recognized, scroll ten columns past the last column of the main body of the spreadsheet to view the user-defined lists with their associated values.

WOCUSTFIELDID	
NULL	NULL
	1 WATER
	2 SEWER
	5 BUILDINGS
	6008 DIGSMART
	6010 STORM

Do not change!

**IMPORTANT:** Do not change this information as it is listed for the user’s information only. These fields are defined in Designer.

- For dropdowns with just a few options, the options are listed in the box.

Y N NOT NULL	D = Day W = Week M = Month Y = Year
--------------------	--

- **Date Time**—Use a standard date notation.
- **KEYWORDS**—Enter desired keywords, separated by a comma and a space.

KEYWORDS	
4, FIRE, HYD, HYDRANT, KEN, KENNEDY	

- **Must use Designer**—This field must be populated using Cityworks Designer.
- **No longer used by Cityworks**—These fields may contain information from older versions of Cityworks that have changed in more recent versions of Cityworks.

[varchar] (30)  
NOT NULL  
(Required for  
new entries)

- **Required for new entries**—Must populate this field.
- **Do not alter/add values**—Unique **ID** and **SID** fields cannot be edited as they are consecutive, system-generated, numbers and are automatically populated with the appropriate values when the new information is added.

**NOTE: MaterialUID and EquipmentUID must be assigned unique IDs; for example, use a different ID for each battery size.**

EMPLOYEEID	EMPI
4031	

2. Select the entire row(s) of desired data to add to the Cityworks database.

	A	B	C	D	E
1	<b>Employee</b>				
2	<b>EMPLOYEEID</b>	<b>EMPLOYEEID</b>	<b>FIRSTNAME</b>	<b>EI</b>	<b>LASTNAME</b>
3	5744	21138	CHARLIE		BAXTER
4			WENDY	S.	DAVIS
5			BOBBY	D	GUNTER
6			WENDY	L	HASLAM
7			WENDY	F	HASSLEBACK
8			WENDY	R	JONES
9			DERICK	J	LARSEN
10				B	MARSHALL
11				A	MESSER
12			AN	J	MILLER
13				F	ROBERTS
14			ECA		SYSTEMS
15			VE		THOMAS
16			BELL	D	VALENZY
17			NK	D	WADE
18					WSD
19			D	B.	JOHNSON
20					
21					

3. Right-click the mouse in the highlighted region to open this context menu.
4. Select the option **Update Cityworks Record(s)**. The template cycles through each cell in each selected row, updating existing data and inserting new data. New cell values committed to the database without any errors are displayed in blue. Cell values with errors are shown in red. Unaltered values are black.

	A	B	C	D	E	F	G	H
1	<b>Employee</b>							
2	<b>EMPLOYEEID</b>	<b>EMPLOYEEID</b>	<b>FIRSTNAME</b>	<b>EI</b>	<b>LASTNAME</b>	<b>TITLE</b>	<b>PAGER</b>	<b>WORKPHONE</b>
3	5744	21138	CHARLIE		BAXTER	Storm Supervisor	801-537-1111	801-537-1131
4	11930	20225	WENDY	S.	DAVIS	Call Taker		801-537-1134
5	4031	21238	BOBBY	D	GUNTER	Water Supervisor	801-537-1122	801 537-1132

## Delete Cityworks Record(s)

Deleting a record removes the items from the specific table as well as all related data in related tables. However, it does not delete existing work order or service request data. See [Associated Table Deletions](#) for all related table deletion information.

MaterialLeaf			
MATERIALSID	MATERIALUID	RTNUM	DESCRIPTION
12024	VLVACTRHYD	M3-203	Hydraulic valve actuator
		88412	Electric valve actuator
		26630	4 inch Watts gate valve
		16931	1-1/2 inch Crane gate valve
		17153	2 inch Watts backflow preventor
		50334	1 inch Febco backflow preventor
		60357	12 inch Techno gear-operated waf
		50302	3 inch ITT-Grinnell lug style butter
		33198	Vortran air release valve
		39218	Benton air release valve
		29536	5 HP Aerator motor
		21963	1.5 HP Generator Motor
		68032	USA Electronics Receiver well co
		65218	Textronics Wire Terminal Kit
			480 Volt Single Phase distribution
			120/240 Volt Single Phase distribu
		45561	2x2x1 inch PVC tee
			12x12x12 inch PVC tee
		48229	6x6x6 inch cast iron tee

5. Select the entire row(s) of data to delete.
6. Right-click in the highlighted region to open this context menu.
7. Select the option **Delete Cityworks Record(s)** to open the confirmation box.
8. Click **Yes** to confirm the data deletion and delete the selected rows.

### Associated Table Deletions

The associated tables where data is deleted when deleting records from the various templates include the following.

#### WOTemplate

- **WOTempAttachment**
- **WOTempComment**
- **WOTempGroupRight**
- **WOTempInstruction**
- **WOTempTask**

#### Employee

- **CwCustField**
- **EmployeeAttachment**
- **EmployeeSkill**
- **EmpModule**

- **GroupUser**
- **RelEmpToField**
- **StoreGroupUser**

#### **ProblemLeaf**

- **ProblemAttachment**
- **ProblemComment**
- **ProblemGroupRight**
- **ProblemKeyword**
- **ProblemMapLayer**
- **ProblemNode**
- **ProblemQuestion**

#### **ContractorLeaf**

- **ContractorNode**
- **CwCustField**

#### **EquipmentLeaf**

- **EquipmentNode**
- **CwCustField**

#### **MaterialLeaf**

- **MaterialNode**
- **CwCustField**

#### **TaskLeaf**

- **TaskNode**
- **CwCustField**

## **Inserting New Data**

New data may be entered using the template or using a data sheet. See [Import From Data Sheet](#) for information on that option.

1. Scroll to the first empty row at the bottom of the table.

	A	
1	ContractorLeaf	
2	CONTRACTORSID	
10	11950	Cazie
11	11954	All-S
12	11956	Timb
13		
14		
15		
16		
17		

Do not alter/add column values

2. Skip the cell in the first column (**SID** value) since new records added to the database are automatically assigned the appropriate **SID** value.

**IMPORTANT:** Do not populate the **SID** (system ID) value for new entries or alter it for any existing records.

3. Enter the new information in the row, completing all required data fields for the new record(s).
4. Select all new records and right-click in the highlighted area to open the context menu.

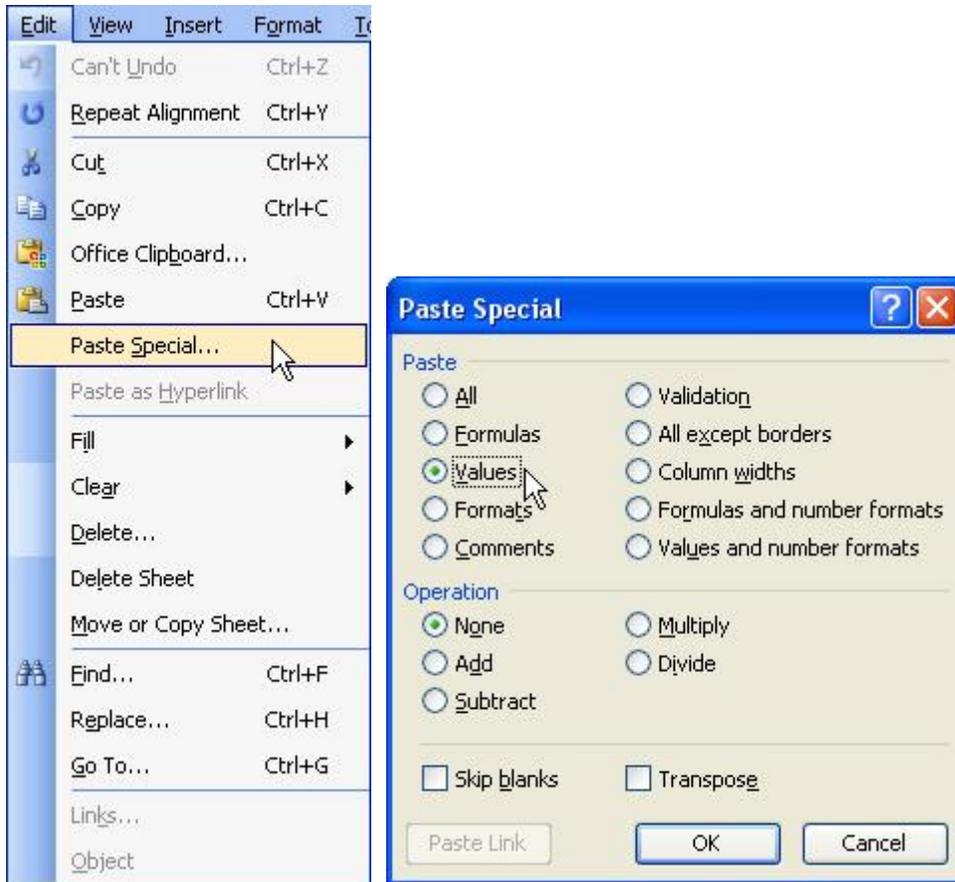
12	11956	Timberline Construction Co.	F5477811	Construction services
13		RH Johnson Construction Inc.	2158692	General & engineering contractors
14		Hunt Electric, Inc.	681547	Electric contractor & project managers

5. Select the **Update Cityworks Record(s)** option near the bottom to commit the new record(s) to the database.

New cell values displayed in blue have been committed to the database. Cell values with errors are red. Unaltered values are black.

ContractorLeaf	CONTRACTORSID	CONTRACTORNAME	ACTORN	DESCRIPTION
	11956	Timberline Construction Co.	F5477811	Construction services
	12025	RH JOHNSON CONSTRUCTIO	2158692	General & engineering contractors
	12026	HUNT ELECTRIC, INC.	681547	Electric contractor & project managers

**IMPORTANT:** When copying data from another worksheet, use the Excel **Paste Special** command from the Excel **Edit** menu to paste only the cell values. If **Paste Special** is not used, all validation checks on the destination cells are removed.



## Cityworks Custom Data Fields

The template works with **Custom Data Fields** (not the same as **Custom Categories**) defined in Designer. When custom fields are detected for the desired table, the fields are loaded in the spreadsheet at the end of the standard table fields, right before the **Keywords** column if **Keywords** is part of the selected template.

Custom fields must first be defined in Designer in order for them to appear in the template. If the custom fields use codes, those codes are loaded into the template as a selection list.

AM	AN	AO	AP
<b>All Employee Custom Data Fields</b>			
<b>EMERGENCY CONTACT</b>	<b>HIRE DATE</b>	<b>MAILING ADDRESS</b>	<b>BIRTH DATE</b>
Melissa Johnson 798-6571	12/10/2006	1901 N. Santa Fe Ave., Thomasville 84070	1/26/1981
Amber Connor 882-9475	1/1/1996	1743 Raquel Rd., Thomas Lake 84094	3/17/1956
Keith Davis 560-0333	3/1/2001	1388 E Wingpoint Ave., Thomasville 84070	5/30/1981

If new records have required fields with a default value, this value is entered automatically. Required fields with no default value have a temporary value assigned in the field, such as **Value Required**. The administrator should add the information.

<b>EMERGENCY CONTACT</b>
Value Required

## Troubleshooting

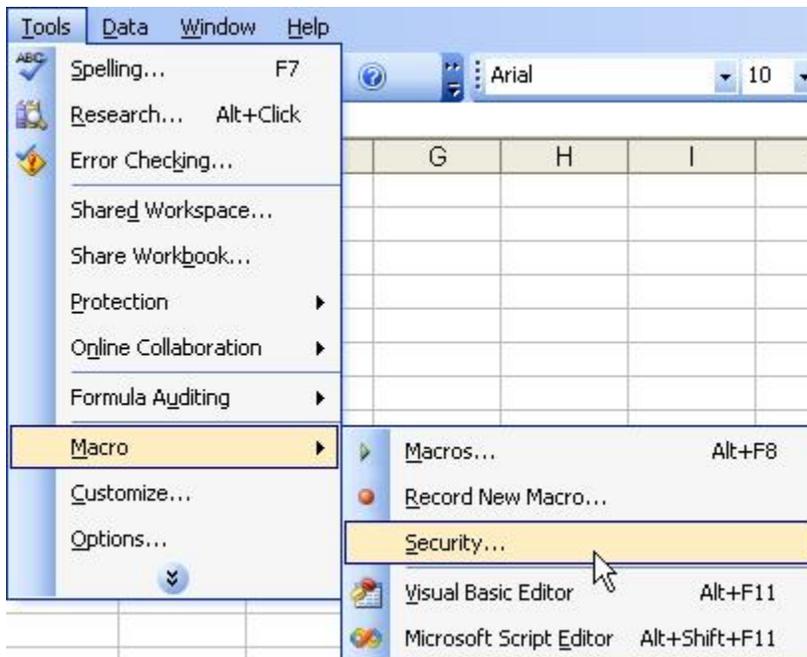
The most common errors when accessing the Cityworks Data Template are having no login screen open, a missing or incorrect list selection, and a password prompt when closing. Please call Azteca Systems Inc. Customer Support if additional help is needed.

### No Login Screen

If no login screen appears after opening the **CityworksDataTemplate.xls** file, check the **Macro Security** setting. Macro security set to **Very High** or **High** disables the macros.

**NOTE:** A dialog box may open after logging in where the user may select **Enable Macros** to open the Cityworks Data Template (if the setting is set to **Medium**). See the image at the end of this section.

1. Using the **Tools** menu in Excel, select **Macro > Security**.



2. Set the **Security Level** to **Medium** or **Low**.



**NOTE:** The **LOW** setting allows macros to always run.

Setting the security to **MEDIUM** prompts the user to enable or disable the macros each time the file is opened.



## Missing or Incorrect List Selection

Selection list values are loaded into the spreadsheet from the database into columns not used by the template. They can be viewed by scrolling to the top record, then scrolling ten columns past the last Cityworks field. These values must not be altered, deleted, or overwritten.

PRIORITY		SUBMITTO	
NULL	NULL	NULL	NULL
1	Very High	4009	GAINES, NATHAN
2	High	4031	GUNTER, BOBBY D
3	Medium	5737	MEYERS, CLINT P
4	Medium Low	5744	BAXTER, CHARLIE
5	Low	5759	LARSEN, FREDERICK J

Pasting data without using the **Paste Special** command may override these cell values. The only way to repopulate these lists is to reload the table.

## Password Prompt When Closing

A bug in Google Desktop search is responsible for a password prompt appearing when closing the template. This happens because Google desktop tries to index the macros but can't because the macros are password-protected.



The fix requires changing a registry key value from 2 to 3 (2 is the default value).

1. Open the registry editor and search for this key:  
**HKEY\_CURRENT\_USER\Software\Microsoft\Office\Excel\Addins\Office.Desktop.Google.com\**
2. Change **LoadBehavior** value from 2 to 3.
3. Close the registry editor.
4. Cancel the CityworksDataTemplate Password message.
5. Exit out of the Cityworks Data Template.

# Cityworks Customization

Cityworks can be customized to an organization by modifying the text, labels, and colors of fields in Cityworks and creating or modifying print templates.

## Cityworks Customize Form

The Cityworks domain administrator may choose to customize the Cityworks service request and work order forms. These modifications are effective for all users in the domain. The ability to customize the layout of these forms allows the organization to designate mandatory fields for their users to fill in through color-coding and change text captions to reflect the organization's nomenclature to facilitate data entry or for non-English users to view the text in their own language. However, changing the layout of the form does not affect the backend of the Cityworks database which retains the original names.

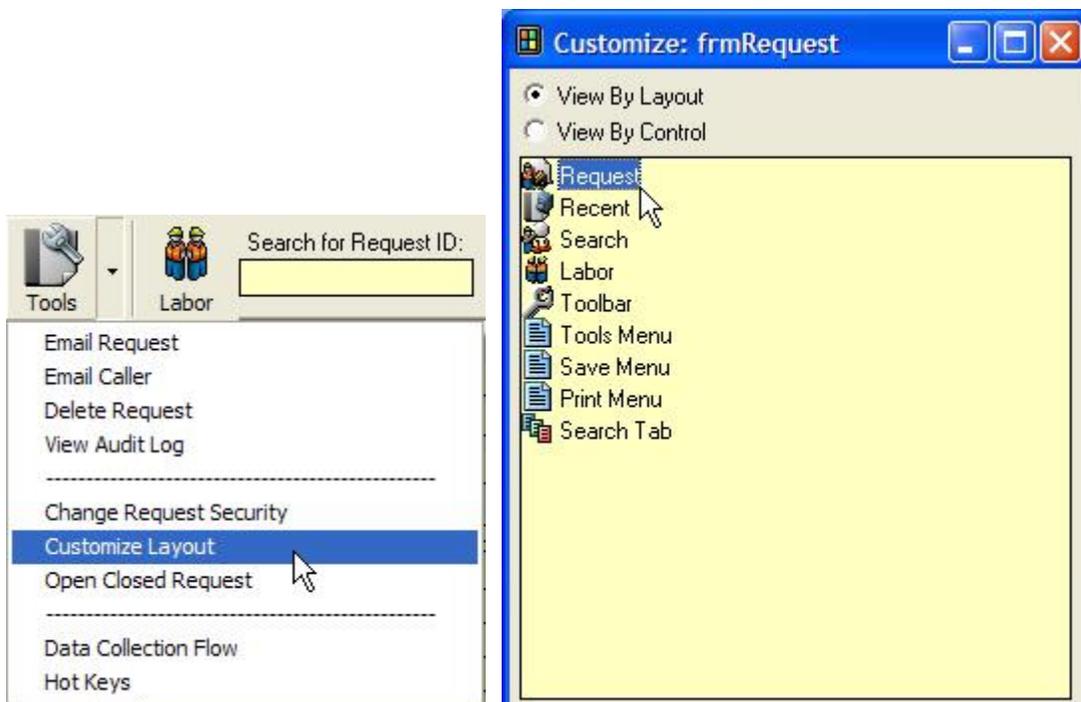
Customization may include changing the text on buttons or field labels; hiding a field; italicizing, bolding, or underlining; adding a border; and modifying the text color or background color. A **Preview** box shows a sample of the selections so they can be viewed before applying them.

However, not all options are available for all items. For example, the only thing that can be changed on a **Tab, Toolbar, or Toolbar Menu** is the **Caption**; therefore, the **Preview** box and color dropdowns are black with the checkboxes grayed out, leaving only the **Caption** field active. **Hide** is also grayed out for some functions for items which cannot be hidden.



## Service Request Customize Layout

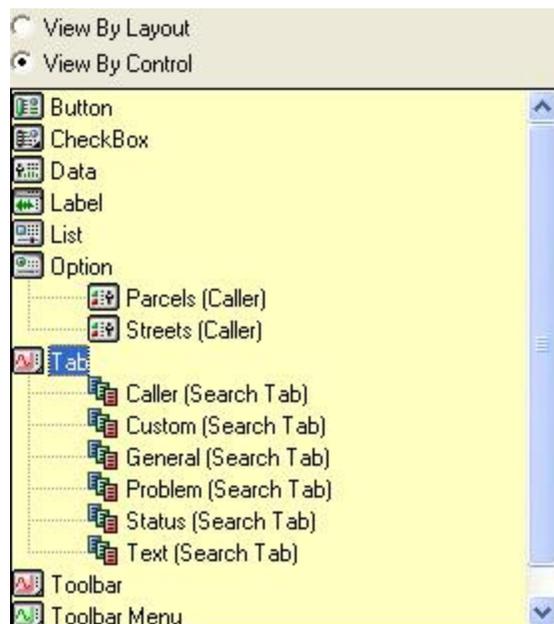
1. Log in to Cityworks Desktop or Standalone.
2. Open the service request form and select **Customize Layout** from the **Tools** dropdown menu to open the **Customize** box.



3. Select the radio button which is best suited to the task.

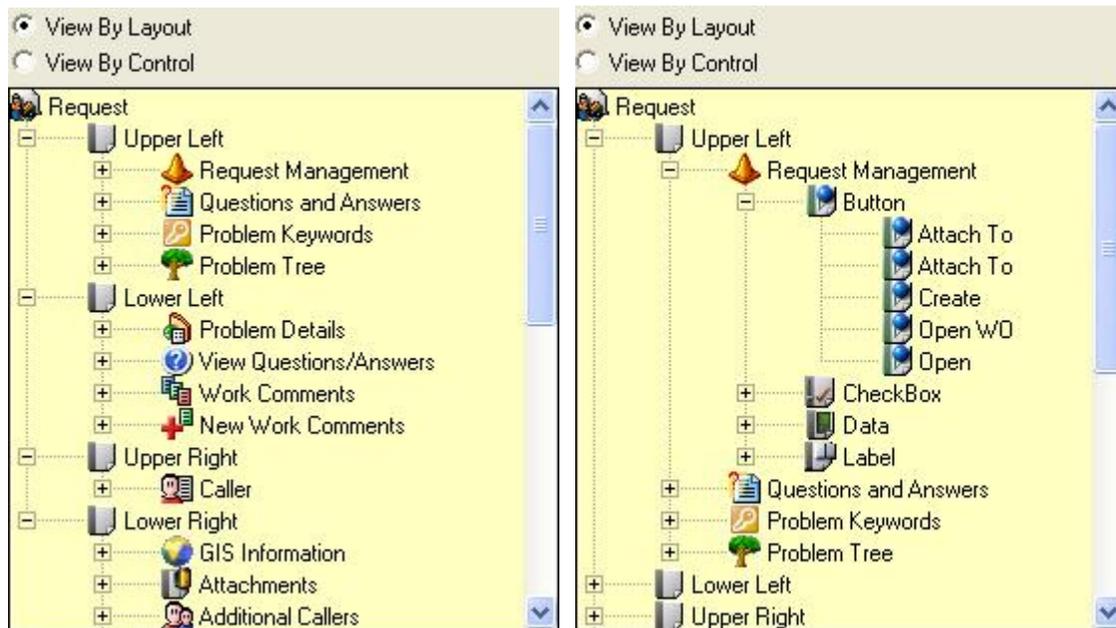
- **View By Layout**—Use for changing the field labels, colors, or backgrounds by pane.
- **View By Control**—Use to change the layout of all buttons, checkboxes, data entry areas, labels, lists, options, tabs, toolbars, and toolbar menus.

**NOTE: View By Control** lists the pane where the item is found in parenthesis following the name.

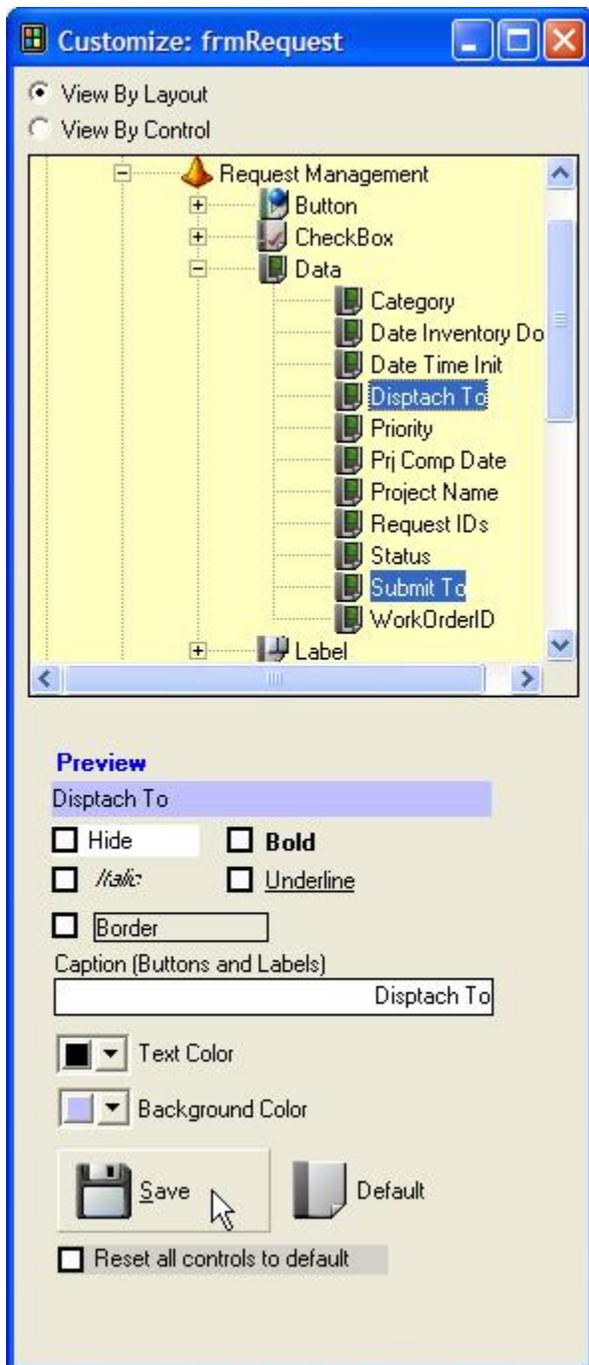


4. Double-click on the icon in the list to display the contents inside, clicking on the plus sign if needed to display the individual items.

**TIP:** The items are displayed in alphabetical order.



5. Select the item(s) to change, using **Ctrl** or **Shift** for multiple selections.



6. Check the desired checkboxes.

- **Hide**—Use to hide the field, leaving an empty space matching the background color instead of the item.



- **Bold**—Use to draw attention to an item.

**TIP:** When bolding text, verify there is enough space to read the text on the form. If there is not enough room, not all of the text will be visible.

- **Italic**—Use to italicize the text.

**TIP:** Italics require more space than regular text so verify the selected fields are still visible once the change is made.

- **Underline**—Adds a line under the text in the same color as the text.

Dispatched To

- **Border**—Adds a black box around a button, data field, or label.

**NOTE:** **Border** does not apply to checkboxes.

- Optional: Change the **Caption** by typing the new text in the box.

**NOTE:** Field captions must be changed one at a time.

**TIP:** A caption may be changed to incorporate the terms used by the organization and with which the employees would be more familiar with, e.g., changing **Shop** to **Service Area**.

- Click the **Save** button to change the layout.

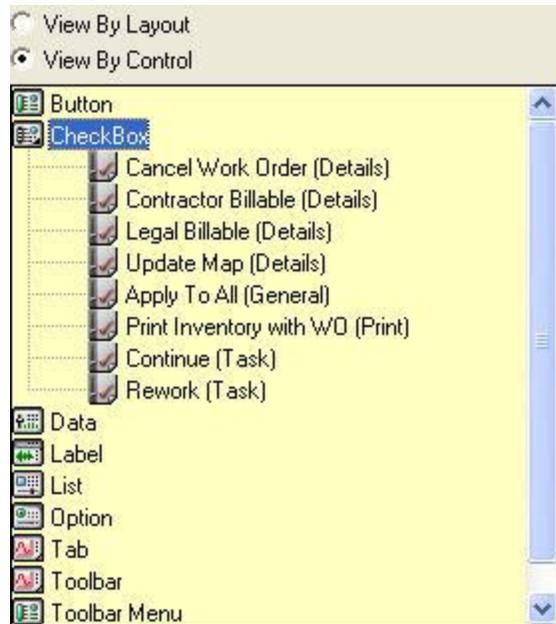
Click the **Default** button with the item(s) selected to restore the default settings or check the box for **Reset all controls to default** to restore all default settings.

**IMPORTANT:** To add a hidden item back on to the form, select it and uncheck the **Hide** box. Click **Save** and exit out of the service request form. This will automatically close the **Customize** form. Open the request window to refresh the form which adds any hidden items that have been unchecked.

## Work Order Layout Manager

Work orders are customized in the same manner as service requests. Open any work order template using Standalone or ArcMap and select **Layout Manager** from the **Tools** dropdown menu to open the **Customize** form and follow steps 3-8 under [Service Request Customize Layout](#). In addition to having a **Layout Manager** for work orders, there is a separate **Layout Manager** option on the **Work Order Search** window (see [Work Order Search Layout Manager](#)) and a **Form Layout** button on each Cityworks inspection form that opens a **Customize** window for each inspection.

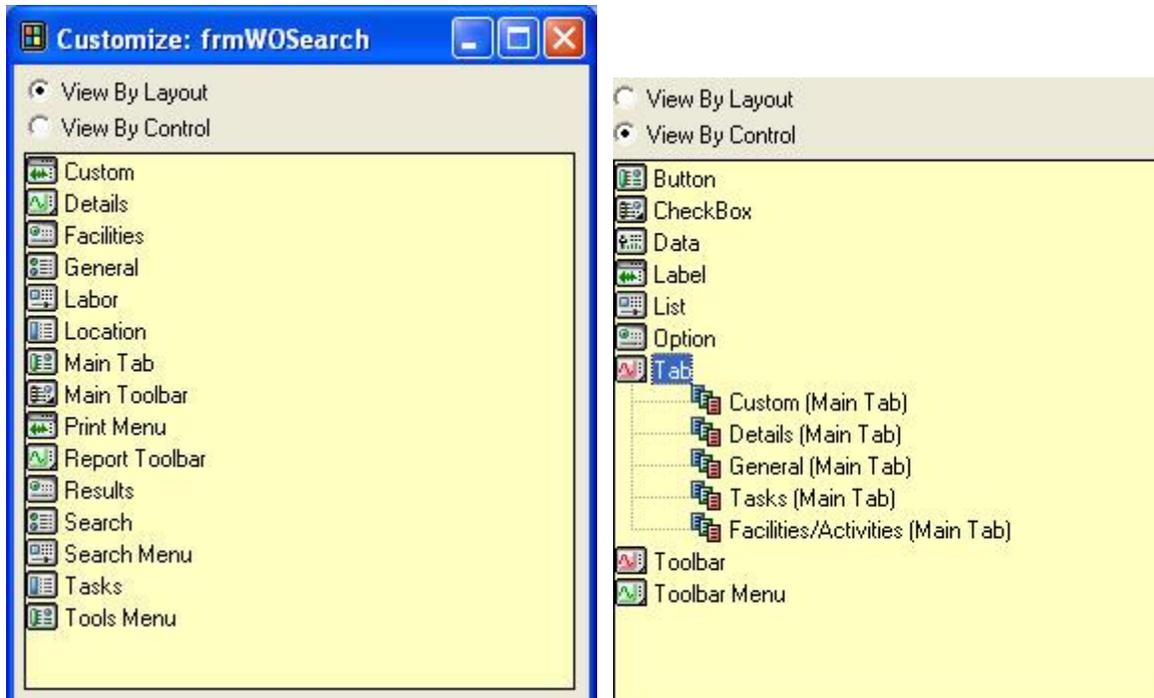




## Work Order Search Layout Manager

A separate **Layout Manager** is available for the **Work Order Search** window and is accessed in the **Search** dropdown menu. This **Customize** form works the same as the others.





## Customizing Print or Email Templates for Desktop

Print or email templates may be customized by the organization to contain the information needed in the format desired for requests, work orders, inspections, and emails. Different print templates may be created for each request or work order type or the default template may be modified and used for all requests or work orders. Enter the print template name in Designer. For requests, use **Cityworks Setup > Request Templates > General Info** tab > **Word Template** field. For work orders, go to **Cityworks Setup > Work Order Templates > Printing** tab > **Microsoft Word Template** field.

**NOTE:** Custom inspections can also be created but must be saved with the default template name since there is no field for pointing to a custom template.

Email templates can be created for customers and internal emails which can be sent automatically when requests or work orders are created, closed, etc. Specify custom email templates under **Others > Preferences > Email Settings** tab.

All Cityworks print templates must be located in the **Templates** folder. If customized templates are used, also store a copy in another location to facilitate updating Cityworks software so they can be retrieved and updated using the **Macro Manager** function. The macros are a set of instructions that are carried out before printing to populate the designated field values. Azteca Systems Inc. recommends not editing macros.

**TIP:** When upgrading Cityworks, Cityworks must first be removed and then reinstalled. Therefore, all custom print or email templates are lost unless they have also been stored in another location. Beginning with Cityworks 4.5 sp 4, print templates are not automatically installed with the setup.

The files called **SRAIIFields** and **PWAIIFields** contain a list of all the Cityworks fields that can be used on a service request or work order template. Similar **Allfields** files also exist for each inspection type. Field names are listed in square brackets and are replaced with the field values before printing.

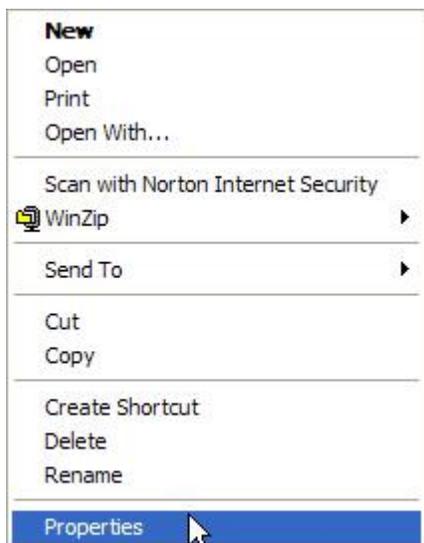
This template contains all work order fields that can be printed. When finished editing, save this template as PW.dot

Description Of Value	Value To Insert Into Print Template
Work Order ID #	[WorkOrderID]
Work Order Category	[WoCategory]
Work Order Description	[Description]
Work Order Priority	[Priority]
Supervisor	[Supervisor]
Projected Start Date	[ProjStartDate]
Projected Finish Date	[ProjFinishDate]
Actual Start Date	[ActualStartDate]
Actual Finish Date	[ActualFinishDate]
Associated Project Name	[ProjectName]
Account Number	[AcctNum]
Work Order X Coordinate	[WoXCordinate]
Work Order Y Coordinate	[WoYCoordinate]
Shop Field Value	[Shop]
Work Order Initiated By Name	[InitiatedBy]

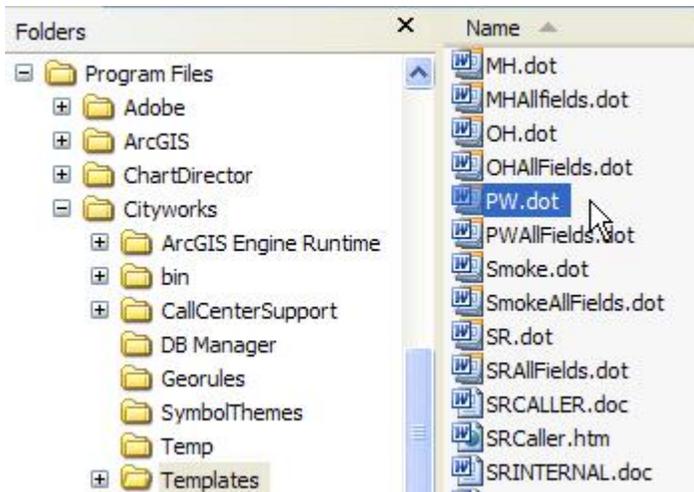
When the **Print** button is clicked, the values are written to a key in the registry. The key is created the first time it prints. The last loaded values remain on the key. The macro is used to retrieve the field values and place them in the designated location on the form.

1. Right-click on the desired default template found in the **Cityworks** directory > **Templates** folder and select **Properties**.

**TIP:** It may be easier to begin with the corresponding **AllFields.dot** file and delete any fields that are not needed.



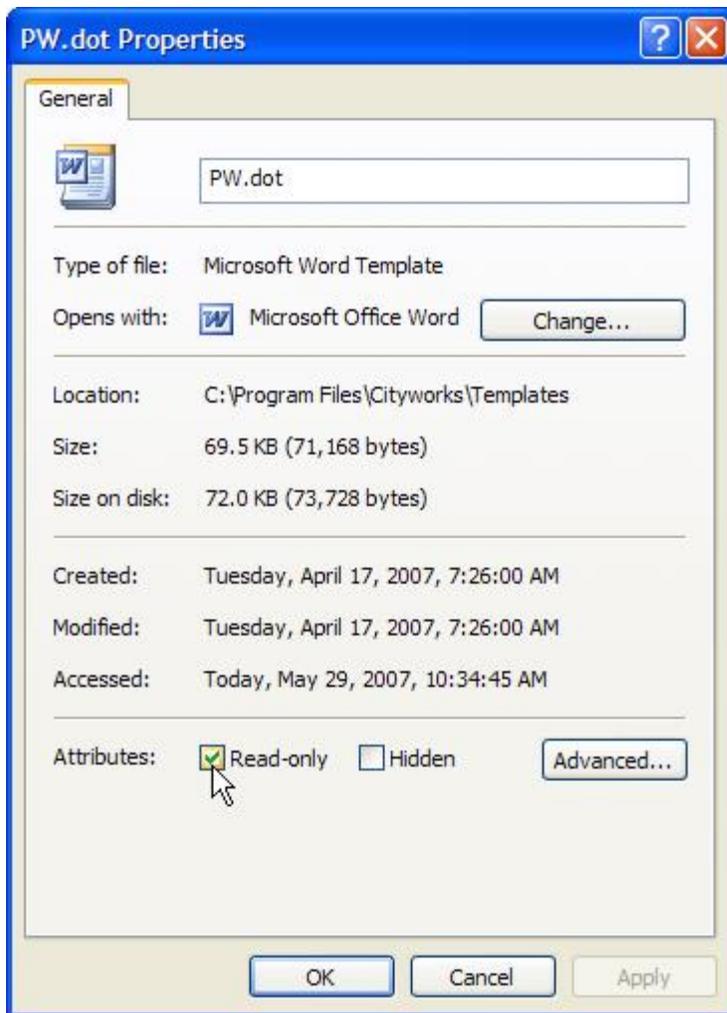
- Work orders—**PW.dot** file.
- Service requests—**SR.dot** file.



- Inspections—the remaining **.dot** files as shown in the table.

Template Name	Form
AR.dot	Automatic Reclose Inspection
Battery.dot	Battery Inspection
Chgout.dot	Meter Changeout Report
CrackSeal.dot	Crack Sealing
Dye.dot	Dyed Water Flood Test Report
EChgout.dot	Meter Changeout Report
FireFlow.dot	Hydrant Flow Test Report
General.dot	General Inspection Report
HydDev.dot	Hydrant Device Inspection Report
Inlet.dot	Inlet Inspection Report
Inspection.dot	Inspection
Meter.dot	Water Meter Test Report
MH.dot	Manhole Inspection and Manhole Dye Test Report
OH.dot	Overhead Electrical Line Inspection
Smoke.dot	Smoke Test Report
SSRelay.dot	Substation Relay
SSTransfmr.dot	Substation Transformer
SubStat.dot	Substation Inspection
SwchDev.dot	Switch Device Inspection
SwchDevRel.dot	Switch Device Relay
Transfmr.dot	Transformer Inspection
Tree.dot	Tree Inspection
TV.dot	TV Inspection Report
UGFac.dot	Underground Facility Inspection
Valve.dot	Valve Inspection Report

- Emails—**SRCALLER.doc**, **SRINTERNAL.doc**, **WOCALLER.doc**, or **WOINTERNAL.doc** file.
2. Uncheck **Read-only** under **Attributes** and click **OK**.



3. Right-click on the template and click **Open** or open from Microsoft Word by browsing to the location.

**NOTE:** If the file is opened by double-clicking on it, it will be a read-only file which may not contain the attached macro.



4. Move current fields to the desired locations and delete any information that is not needed.
5. Type in information labels with database fields in the desired location. Any Cityworks field found in the accompanying **AllFields.dot** file, such as **PWAllFields.dot** for work orders or **SRAAllFields.dot** for requests, in the **Templates** directory of **Cityworks** may be added to a template.

**NOTE:** Fields that have associated information coming from the Cityworks database may not be added to headers or footers.

**TIP:** Be sure to leave enough room for the data as it will wrap to the next line if it is too long.

Add information in tables when the information may require multiple rows to keep it lined up correctly. Long field values wrap to the next line and expand the columns downward to accommodate the additional information. If there are multiple field values, such as entities or callers, place the information in a table with the first row listing the desired column names and the second row the Cityworks field name to provide a separate line for each value when loading the information. When adding multiple asset types to a single work order template, each asset type must be in a separate table with a header row and the tables must be placed at the bottom of the print template. Other Cityworks fields do not need to be in tables.

**Sewer Gravity Main WORK ORDER [Description]**

**Work Order Number: [WorkOrderID]**

In Service: \_\_\_\_\_ Out of Service: \_\_\_\_\_

<b>WO Initiated Date:</b> [InitiateDate]	<b>Supervisor:</b> [Supervisor]	<b>Team Members:</b>	<b>[EstLaborName]</b>
---	------------------------------------	----------------------	-----------------------

<b>Address:</b> [WOAddress] [Location]	<b>Key Map:</b> [MapPage] <b>Shop:</b> [Shop]
---	--

<b>Asset ID:</b> [SGRAVITYMAINFACILITYID]	<b>Main Diameter:</b> [SGRAVITYMAINNOMINALSIZE]	<b>Material:</b> [SGRAVITYMAINMATERIAL]
--	--	--

Geodatabase fields may be added to a work order template but must be added in a separate table with the label on the first row and key word **[FEATURENAMEFIELDNAME]** on the second row, such as **[SGRAVITYMAINFACILITYID]**. They must also be set to **Printable** in Designer under **GIS Setup > Asset Form Configuration** for the values to load into the fields.

Field Name	Fore Color	Bold	Visible	File Path	Printable
OBJECTID	0	N	Y	N	Y
Enabled	0	N	Y	N	N
AdministrativeArea	0	N	Y	N	N
FacilityID	0	N	Y	N	Y
Location	0	N	Y	N	Y
InstallDate	0	N	Y	N	Y

6. Save and close the new template if replacing the default template or save with a code name of 8 characters or less as a **.dot** file for requests and work orders (or as a **.doc** file for emails) in the same file directory. The default location is **Program Files > Cityworks > Templates**.

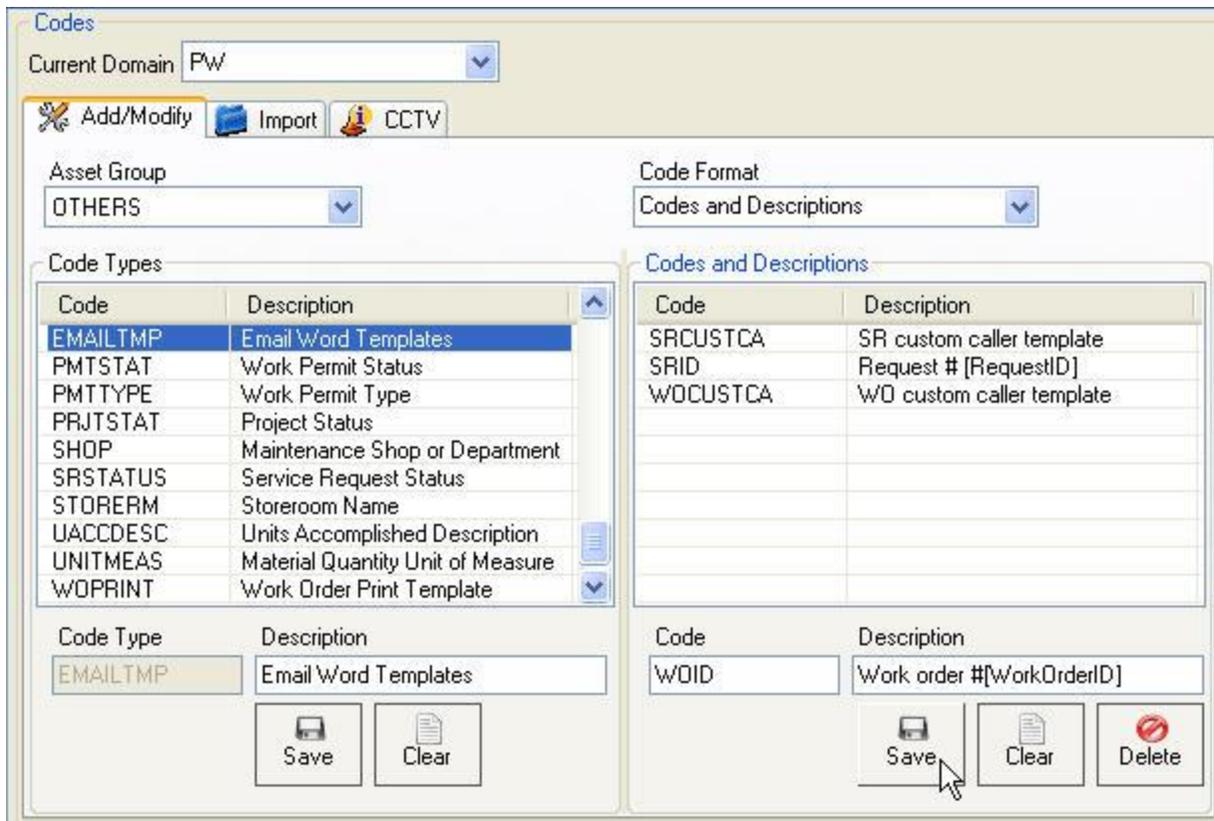
File name:

Save as type:

**NOTE:** Inspection templates must retain the default name.

**TIP:** When replacing a default template, save the original in another location or with another name. After verifying that the data loads correctly, this template can be deleted.

7. Right-click on the file in the **Templates** directory, select **Properties**, and check the **Read-only** box so the template cannot be changed by a user viewing a print preview. See image with step 2.
8. For defining custom email or work order templates: Go to **Others > Codes**, select the **Current Domain** and **Others** as the **Asset Group**, and either the **Email Word Templates** or **Work Order Print Template** and populate the **Code** and **Description** for each custom template.

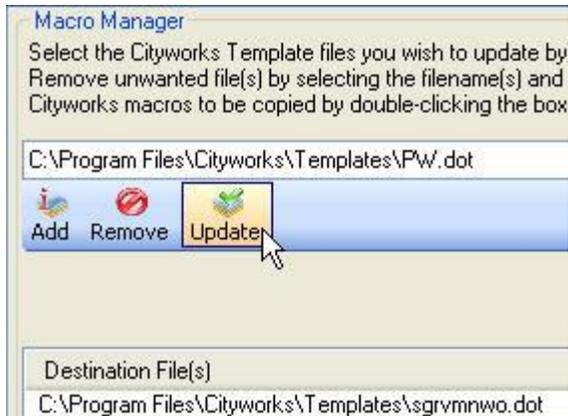


9. Open to the applicable location and add the template name.

- **Requests**—Type the template name in the **Value** column under **Request Templates** > **General Info** tab > **Word Template** field (multiple requests may be done at the same time) or **Request Template Edit** window for the desired request > **General** tab > **Word Template** field.
- **Work Orders**—Open the desired **Work Order Templates** for the desired asset (multiple work order templates may be selected for the asset) and switch to the **Printing** tab. In the **Template Settings** box, double-click in the **Microsoft Word Template** field and select the template from the **Codes** box.
- **Emails**—Select from the **Codes** box by double-clicking in the **Custom Email Template** field under **Others** > **Preferences** > **Email Settings** tab > **Service Request Emailing** or **Work Order Emailing** box > **Internal** or **Caller**.

10. Verify that the information is loading correctly and that the layout is acceptable by opening a request, work order, or inspection that uses the newly created template and clicking **Print Preview**, **Print**, or **Email**.

If the form loads without inserting the specific field information, go to **Designer** under **Others** > **Macro Manager**, select the existing Cityworks template as the source file from which to apply the macros and the template(s) to copy them to as the destination files and click the **Update** button to apply the macros.



11. Make a backup copy of all custom templates in another location so they can be copied back into the **Templates** folder when uninstalling and reinstalling Cityworks.

## Updating Cityworks Print Templates

Beginning with Cityworks 4.5 sp 4, the setup comes with a separate folder of print templates so it will no longer automatically install new print templates and overwrite custom templates which have the same name. Two methods are available for Cityworks domain administrators to handle updating print templates.

- Manually copy the updated print templates to the user's **Templates** folder.
- Update using a network location.

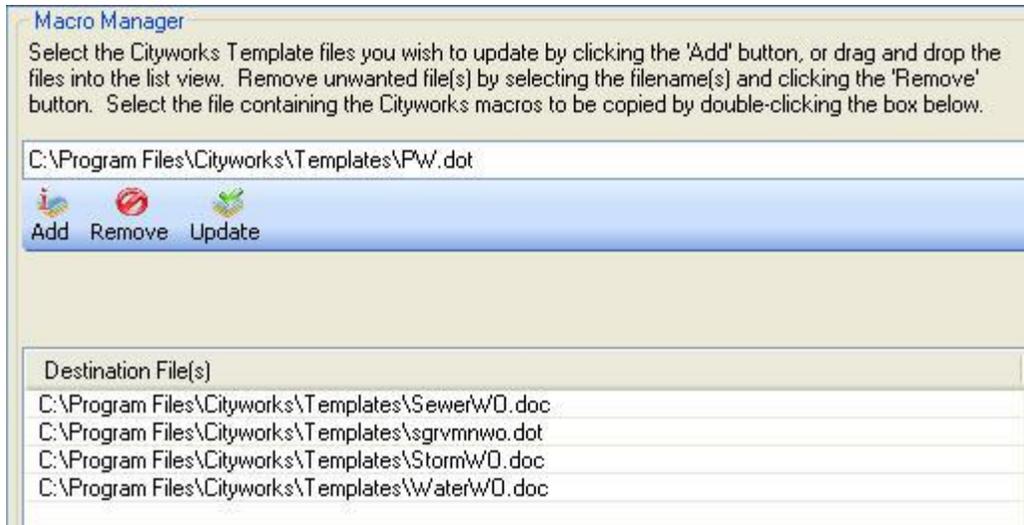
## Manually Adding Custom Print Templates

Follow these steps each time a new Cityworks service pack contains a separate folder for print templates.

1. Move custom print templates with the default file name to another location before running the install.

**NOTE:** Custom print templates which have been renamed may be left in the **Templates** folder and updated from there.

2. Install the service pack.
3. Copy the **Templates** folder contained in the service pack to the **Cityworks** folder.
4. Update the macros on the custom templates using **Cityworks Designer > Others > Macro Manager**.

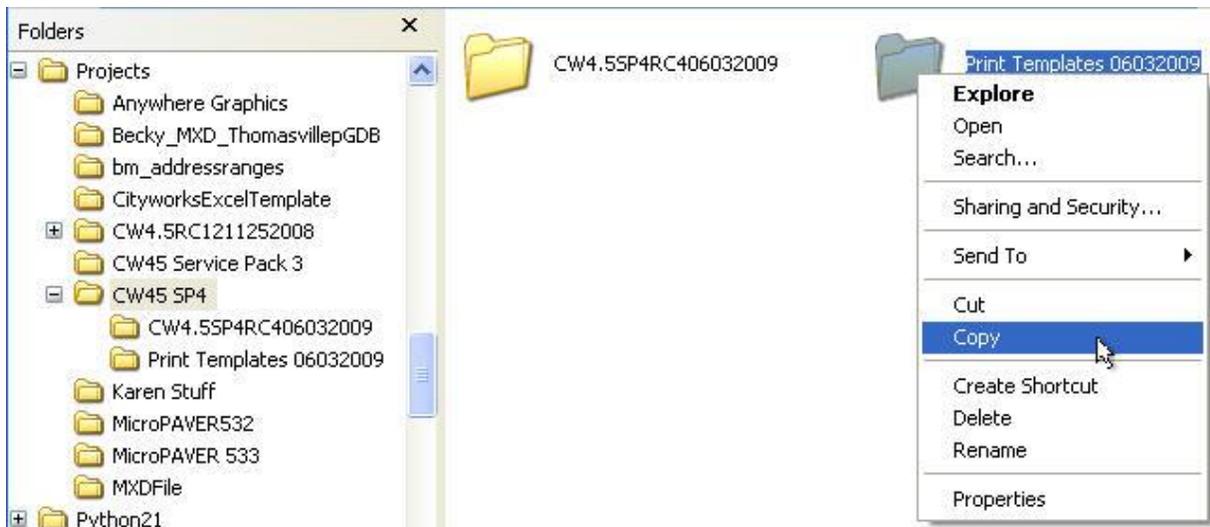


5. Copy the updated custom print templates back into the Cityworks **Templates** folder.

### Using the Network Updating Function

Using the network updating function allows the print templates to be stored in a centralized location which can be accessed by each user. The Cityworks domain administrator is responsible for following these steps each time a new service pack is installed which contains changes to the print templates.

1. Copy the **Templates** folder from the service pack.



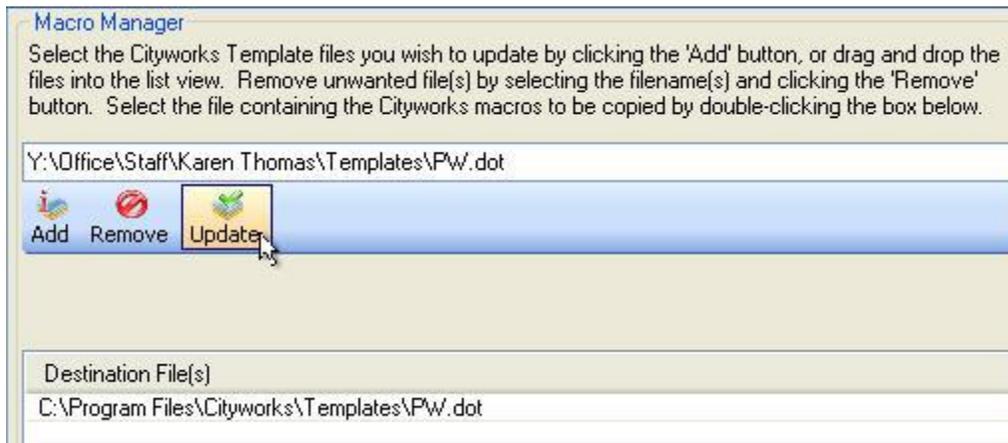
2. Place it in the desired network location.
3. Log in to **Cityworks Designer > Others > Preferences > General** tab and scroll down to the **Print Templates - network location** option.



**last update** field. The software uses this date to compare the dates of the templates, adding a date to the older file name.

**IMPORTANT:** This checkbox must be checked each time a new service pack containing new templates is installed to refresh the date.

7. Update the macros on all custom templates using **Cityworks Designer > Others > Macro Manager**. Skip to step 9 if using only the Cityworks default print templates.

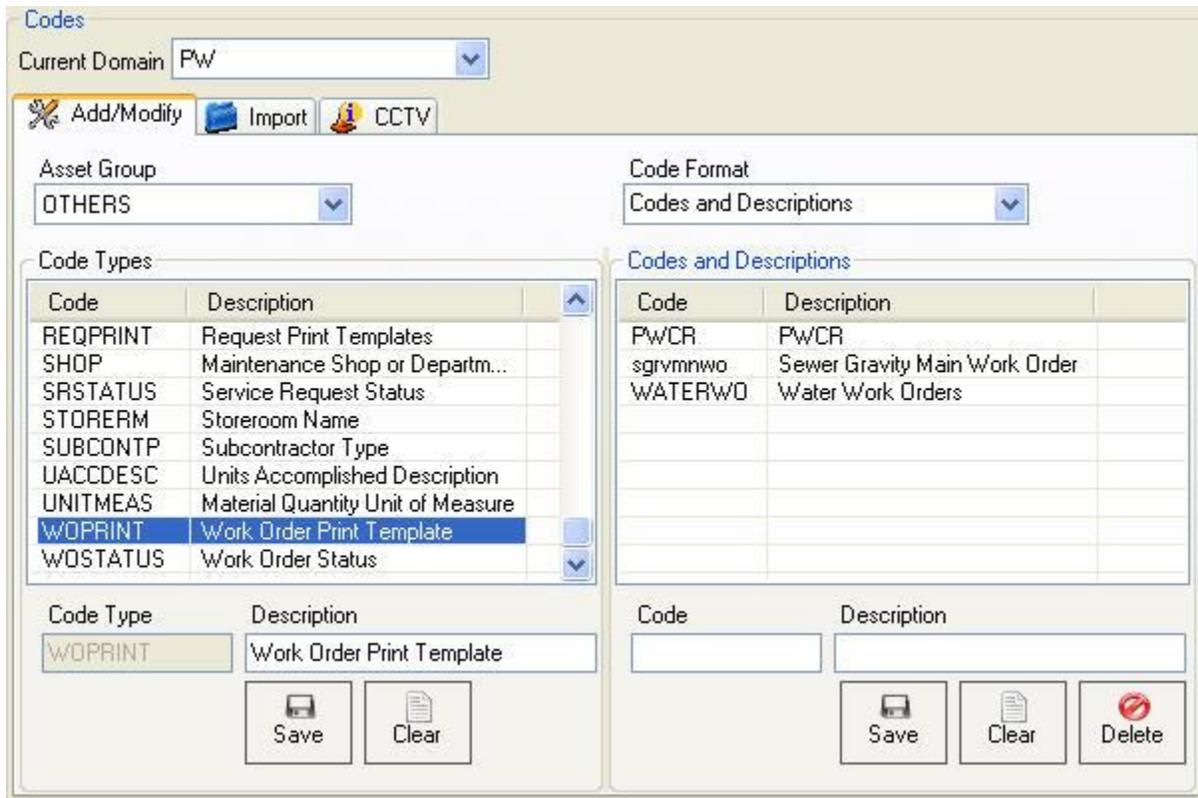


8. Place the custom templates in the network **Templates** folder.
9. Start up ArcMap or Standalone. The first time Cityworks is accessed by each user after the update, the software searches the network folder for newer versions of the print templates. If it finds any, it copies the template(s) into the user's Cityworks **Templates** folder, automatically updating it to match the **Templates** folder in the network location.

### Renaming and Linking Custom Print Templates

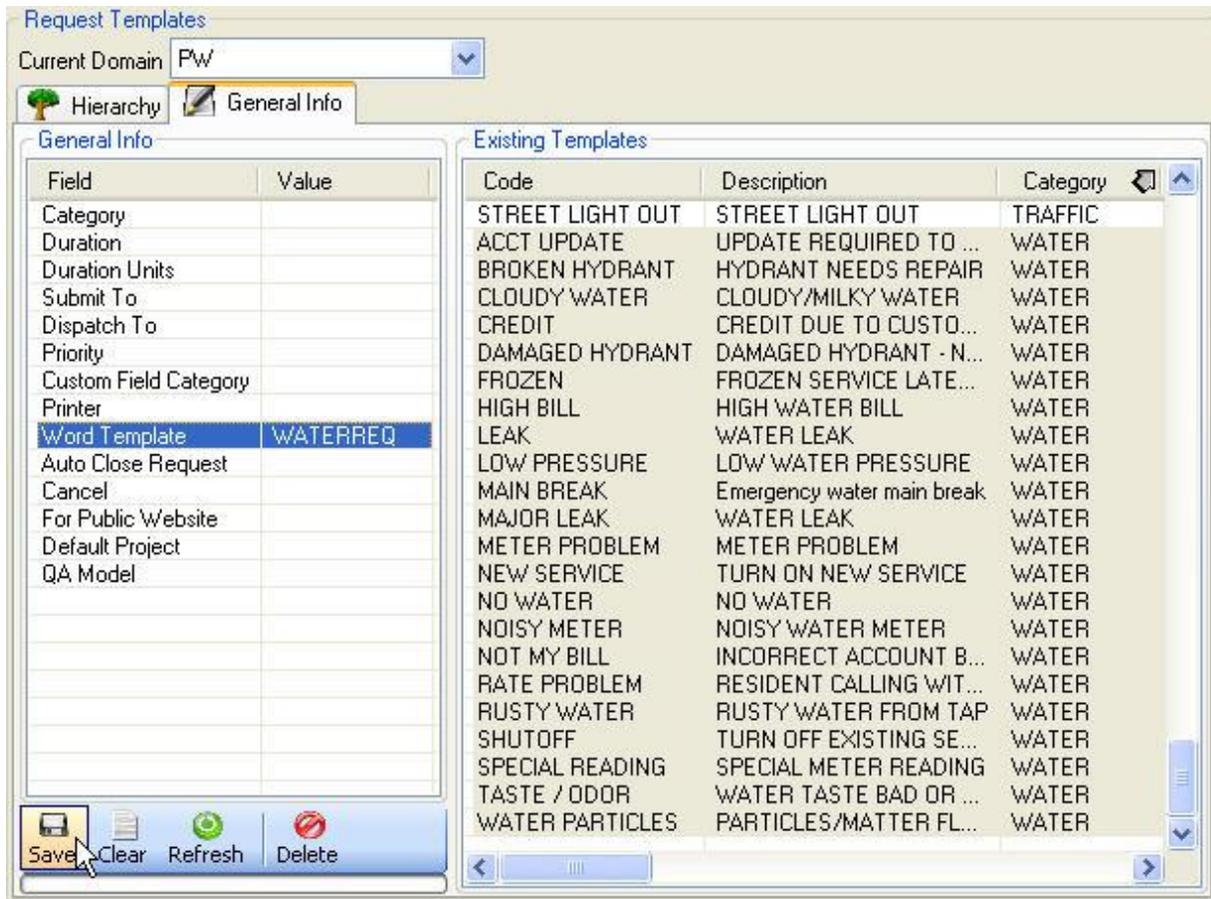
A default template can be customized, renamed, and stored in the Cityworks **Templates** folder with a new name to avoid the problem of figuring out which template is the custom one. Cityworks Designer allows adding a custom print template to multiple requests or work orders at the same time so it's quick and easy to link the custom templates to the desired requests or work orders.

1. Create the custom print templates.
2. In Designer under **Others > Codes** on the **Add/Modify** tab, populate the code type for **REQPRINT/Request Print Templates** and **WOPRINT/Work Order Print Templates** with the custom names.

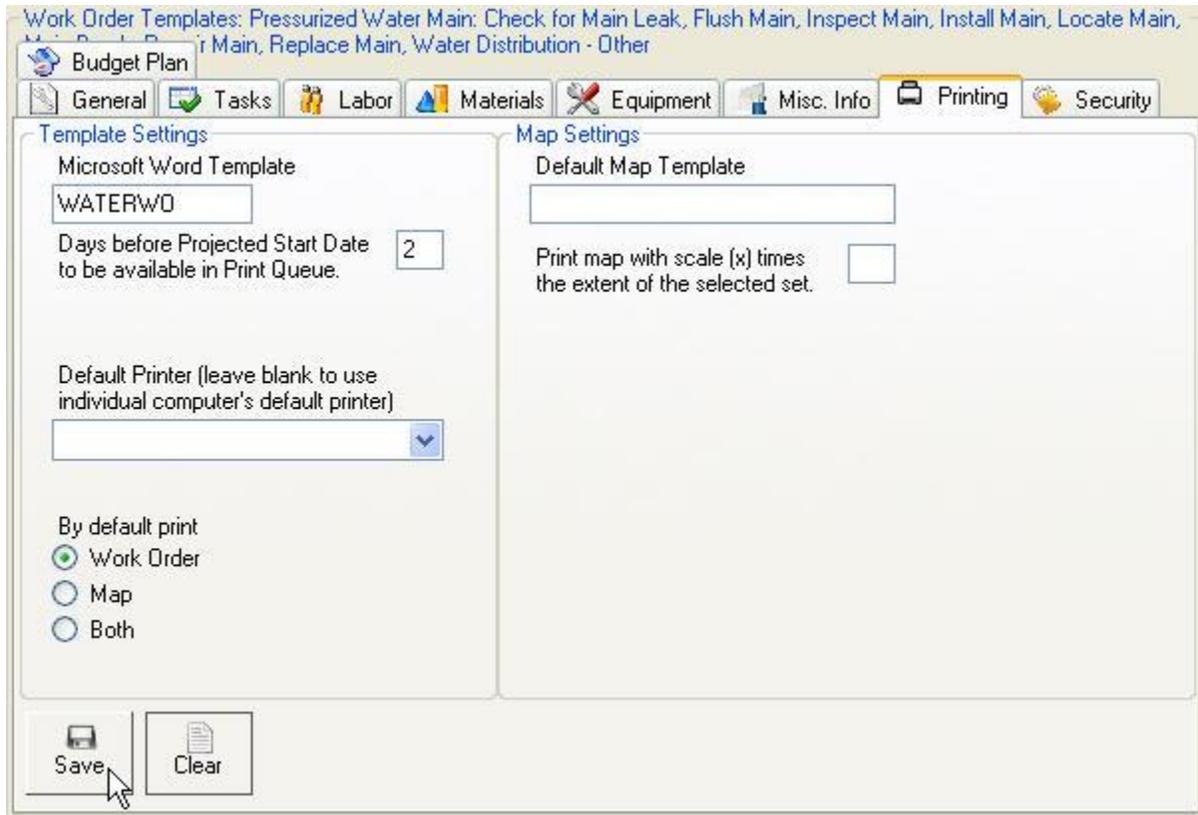


- On the **Request Templates/General Info** tab under **Cityworks Setup**, select the request templates from the **Existing Templates** list on the right pane and select the **Word Template** from the dropdown list.

**TIP:** *Sorting the list by **Category** (or another applicable column header) before selecting the templates may make it easier to find the desired templates.*



- Under **Work Order Templates**, select the work order templates for each asset from the **General** tab, switch to the **Printing** tab, click in the **Microsoft Word Template** field to open the selection box, double-click on the desired template, and save.



5. Update the macros on all customized templates using **Cityworks Designer > Others > Macro Manager**.

## Customizing Server Print Templates

**NOTE:** The print templates in Server no longer have macros. Macro Manager is only used or needed on Desktop print templates.

Server AMS print templates are located in the PrintDocx folder at `<install_drive>/inetpub/wwroot/<site_alias>/WebSite/PrintDocx`. The files called InspAllfields.docx, SRAllfields.docx, and PWallfields.docx contain a list of all the Cityworks fields that can be used on an inspection, service request, or work order print template. The inspection, request, and work order default print templates are titled Insp.docx, PW.docx, and SR.docx.

1. Copy the InspAllfields.docx, SRAllfields.docx, or PWallfields.docx template to a new location so you are not editing the original.
2. Edit the copied template to delete any fields that are not needed.
3. Replace the appropriate default templates (Insp.docx, PW.docx, and SR.docx) with the edited copy.
4. Make a backup copy of all custom templates in another location so they can be copied back into the PrintDocx folder when uninstalling and reinstalling Cityworks.

## Map Images Print Template Configuration

Beginning with Cityworks Server 2011 B2 sp1, Cityworks Server users can generate map images for printing. When a work order, request, or inspection is created, a map using the X,Y coordinates is stored at `<install_drive>/inetpub/wwroot/<site_alias>/WebSite/WorkManagement/Printing/Media` with the work order, request, or inspection unique Id number.

To generate map images, ensure the **Map Placeholder Image** field (on the last page) is copied to the default print template from the `InspAllfields.docx`, `SRAAllfields.docx`, or `PWAllfields.docx` print template.

**NOTE:** *To print asset printable fields, ensure the **!AssetPrintFields!** field is copied to the default print template.*

## Designer Configuration

To configure Designer to print map images, go to **Others > Preferences**. Scroll to the bottom of the list of preferences on the General tab.

<span>◆</span> General <span>✉</span> Email Settings <span>📅</span> Holidays		
Description	Value	
Default Request Caller Type		
Auto format phone numbers	Y	
Use Request domain preferences for GIS layers first.	Y	
Number of system IDs to use during DataPump check...	1000	
Print Templates - network location.		
Print Templates - last update.		
Use server attachment structure	N	
Cityworks Server Url		
External App		
Server Crystal Reports root directory	CRYSTAL	
Server attachments root directory	C:\CWData\Attachments	
Server map default starting position	Minimized	
Server map scale bar large scale display units	Feet	
Server map scale bar small scale display units	Miles	
Server map scale bar switch display units threshold val...	6000	
Server default layout folder	Default	
Server paging rows per grid	100	
Server default employee labor search by option	GROUP	
Server default contractor labor search by option	HIERARCHY	
Server default material search by option	HIERARCHY	
Server default equipment search by option	HIERARCHY	
Server default task search by option	HIERARCHY	
Server request tree text display.	Code ~ Description	
Server equipment tree text display.	Code ~ Description	
Server material tree text display.	Code ~ Description	
Server task tree text display.	Code ~ Description	
Server Cityworks well known id (spatial reference)	2257	
Server map image output pixel size	medium	
Server map image x buffer distance	1500	
Server map image y buffer distance	1500	

- Server Cityworks well known id (spatial reference)**—Enter the well-known ID (spatial reference) for your map service. To find the well-known ID, open ArcGIS Services Directory, click on the map server being used, and scroll to the spatial reference.

[Wastewater Gravity Main](#) (35)  
[Wastewater Siphon](#) (36)  
[Wastewater Lateral](#) (37)

**Tables:**

**Description:**

**Copyright Text:**

**Spatial Reference:** 2257 

**Single Fused Map Cache:** false

**Initial Extent:**

XMin: 2112409.1466106  
 YMin: 245343.136761817  
 XMax: 2114510.58017787  
 YMax: 246092.276698961  
 Spatial Reference: 2257

**Full Extent:**

XMin: 2099851.22252687  
 YMin: 214327.081578526  
 XMax: 2188080.38919354  
 YMax: 270837.498245193  
 Spatial Reference: 2257

**Units:** esriFeet

**Supported Image Format Types:** PNG32,PNG24,PNG,JPG,DIB,TIFF,EMF,PS,PDF,GIF,SVG,SVGZ,BMP

**Document Info:**

- Title: **KokopelliSprings**
- Author: **g edward arrington**
- Comments:
- Subject:
- Category:
- Keywords:
- AntialiasingMode: **None**
- TextAntialiasingMode: **Force**

**Supported Interfaces:** [REST](#) [SOAP](#)

**Supported Operations:** [Export Map](#) [Identify](#) [Find](#) [Generate KML](#)

- **Server map image output pixel size**—Double-click in the value field and select from small, medium, or large pixel sizes.
  - Small = 240 x 320 pixels
  - Medium = 480 x 640 pixels
  - Large = 720 x 960 pixels
- **Server map image x buffer distance**—Enter the number of units from a center point on the X-axis. This determines how much of the map is included in the picture.
- **Server map image y buffer distance**—Enter the number of units from a center point on the Y-axis. This determines how much of the map is included in the picture.

The X and Y buffer values define the size of the image bounding box by subtracting and adding the buffer distances, in map units, to the X,Y coordinate stored within the Cityworks record (Request, Inspection or Work Order). Save all changes and exit Designer.

## Appendix 1: Cityworks Codes

The required **Code Types** for each **Asset Group** can be found on [www.mycityworks.com](http://www.mycityworks.com) to assist the Cityworks domain administrators in knowing which **Codes** to populate. Predefined asset groups include:

- **Electric** (E)
- **Park** (P)
- **Sewer** (S)
- **Storm** (D)
- **Street** (R)
- **Traffic** (T)
- **Water** (W)
- **Others** (A)—Add custom codes here.

The default values are listed in this appendix for the **Others** code tables as this group of codes applies to all Cityworks users. Following those tables are the codes used in predefined Cityworks inspections and tests.

### Others Codes and Descriptions

If using the Cityworks Storeroom add-on, populate the **ACCOUNT** code type with the desired values (numbers, work descriptions, departments, etc.) so when the user clicks in the **Account** or **Account #** fields for **Issue** and **Receive**, the options will be available to them.

Code Type	Description	Code	Description	Location
ACALLTYP	Caller Type			Service Request/Caller pane/Type field
ACCOUNT	Storeroom Accounts			Storeroom/Issue/Details tab/Account field
				Storeroom/Issue/Search tab/Account field
				Storeroom/Receive/Details tab/Account# field
				Storeroom/Receive/Search tab/Account# field
ACITYCOD	Code for City Name			Cityworks Server AMS
ACODEMAP	Code Mapping	CLOSED	Closed	<b>IMPORTANT:</b> These codes are not found as selection lists or boxes in Cityworks. They update Status on SR, WO, and Tasks. Do not delete these default codes. Descriptions may be modified.
		COMPLETE	Complete	
		CURRENT	Current	
		PENDING	Pending	
ACREWCAT	Employee Crew Category			Cityworks Server AMS
ACTGCODE	ActPerf Mgt Unit Description			Designer/Work Order Templates/Budget Plan tab/ Unit Description field
ACTPAVDP	ActPerf Avg Daily Production			Designer/Work Order Templates/Budget Plan tab/ Avg Daily Production field

Code Type	Description	Code	Description	Location
ACTPCODE	ActPerf Code			Designer/Work Order Templates/Budget Plan tab/ Activity Code field
ACTPELEV	ActPerf Effort Level			Designer/Work Order Templates/Budget Plan tab/ Effort Level field
ACTPINVT	ActPerf Inventory Description			Designer/Work Order Templates/Budget Plan tab/ Inventory field
ACTPMGTU	ActPerf Mgt Unit			Designer/Work Order Templates/Budget Plan tab/ Management Unit field
ACTPPRGC	ActPerf Program Code			Designer/Work Order Templates/Budget Plan tab/ Activity Program field
ACTPWKQD	ActPer Work Qty Description			Designer/Work Order Templates/Budget Plan tab/ Work Qty field
ACUCAT	CU Category			Designer/Materials/Material Edit form/General tab/CU Category field
ADISTRCT	District			Cityworks Server AMS
AEMPSKIL	Employee Skill Sets			Designer/Employees/Skills tab/Defined Skills frame
AMATACT	Material Work Activity			Designer/Materials/Material Edit/Labor & Equipment tabs/Activity field
AORGCODE	Organization Codes			Designer/Employees/Employees tab/General Information box/Organization field
APRIORIT	Priority	1	High	Service Request/Management pane/Priority field
		2	Medium High	Service Request/Search/Status tab/Priority field
		3	Medium	Work Order/General tab/Priority field
		4	Medium Low	Work Order/Attachments tab/Service Requests/ Priority column
		5	Low	Search Work Orders For/General tab/Priority field
APROBCAT	Request Problem Category			Service Request/Management pane/Category field
				Service Request/Search/Status tab/Category field
APSOURCE	Permit Source			Work Order/Define a Permit form/Source field
ATSKSTAT	Task Status	COMPLETE	COMPLETE	Work Order/Tasks pane/Status field
		CURRENT	CURRENT	Search Work Orders For/Tasks tab/Status field
		PENDING	PENDING	
AUDITINT	Material Audit Interval	ANN	ANNUAL	Designer/Materials/Material Edit form/General tab/ Audit Interval field
		M	Monthly	
		Q	Quarterly	
		UNK	Unknown/Not	Storerroom/Materials/Details & Search tabs/Audit Interval field

Code Type	Description	Code	Description	Location
			Specified	
		W	Weekly	
AWOCAT	Work Order Level			Work Order /Work Order form (create new)/ Category field
				Search Work Orders For/Facilities/Activities tab/ Category field
CONSTAT	Contract Status			Cityworks Server AMS
CONFUND	Contract Fund Source			Cityworks Server AMS
CONTTYPE	Contract Type			Cityworks Server AMS
EMAILTMP	Email Word Templates			Designer/Preferences/Email Settings tab/Custom Email Template fields
GLACCOUNT	General Ledger or Financial Account Numbers			Service Request/Labor pane/Account field
				Work Order/Details tab/Account field
				Work Order/Labor pane/Employee radio button option/Account field
GLACCOUNT	General Ledger or Financial Account Numbers (continued)			Work Order/Labor pane/Contractor radio button option/Account field
				Work Order/Material pane/Account field
				Work Order/Material pane/Contractor Material Cost box/Account field
				Work Order/Equipment pane/Account field
				Work Order/Equipment pane/Contractor Equipment box/Account field
				Work Order Search/Details tab/Account field
				Designer/Work Order Templates/General tab/Account field
INSPPRINT	Inspection Print Templates			Designer/Custom Inspection Templates/Print Template field
INSPRESO	Inspection Resolution			Cityworks Server AMS
INSPSTAT	Inspection Status	CANCEL	Cancel	Cityworks Server AMS
		CLOSED	Closed	
PADDDTYPE	Address Type			Cityworks Server AMS
PMTSTAT	Work Permit Status	ACT	Active	Work Order/Define a Permit form/Status field
		CLOSED	Closed Permit	

Code Type	Description	Code	Description	Location
		UNK	Unknown/Not Specified	
		V	Valid	
PMTTYPE	Work Permit Type			Cityworks Server AMS
PRJTSTAT	Project Status	C	Completed	Service Request/Project form/Project tab/Status field
		IP	In Progress	
		NS	Not Started	
		UNK	Unknown/Not Specified	
REQPRINT	Request Print Templates			Designer /Request Templates/General Info tab/Word Template field
				Designer /Request Templates/Request Template
				Edit form/General tab/Word Template field
SHOP	Maintenance Shop or Department			SR/GIS Information pane/Shop field
				Service Request/Search/Status tab/Shop field
				Work Order/Details tab/Shop field
				Search Work Orders For/Details tab/Shop field
SRRESO	Request Resolution			Cityworks Server AMS
SRSTATUS	Service Request Status	CANCEL	Cancel	Service Request/Management pane/Status field
		CLOSED	Closed	Service Request/Search/Status tab/Status field
STORERM	Storeroom Name			Work Order/Material pane/Storeroom list
				Designer/Materials/Material Edit form/General tab/
				Storeroom field
				Storeroom/Issue/Details tab/Storeroom field
				Storeroom/Issue/Search Results tab/Source (Storeroom) field
				Storeroom/Receive/Details tab/Storeroom field
				Storeroom/Receive/Search tab/Destination field
				Storeroom/Materials/Details tab/Storeroom field
				Storeroom/Materials/Search tab/ Storeroom field
				Storeroom/Transfer/Search tab/Source &

Code Type	Description	Code	Description	Location
				Destination fields
				Storeroom/Audit/Search tab/Storeroom field
UACDESC	Units Accomplished Description			Work Order/General tab/right of Units Accomplished field
				Designer/Work Order Templates/General tab/Unit Accomplished Description field
UNITMEAS	Material Quantity Unit of Measure	EA	EACH	Work Order/Material pane/Unit of Measure column
		M	Metric	Designer/Materials/Material Edit form/General tab/Unit of Measure
		UNK	Unknown/Not Specified	Storeroom/Materials/Details tab/Unit of Measure field
WOPRINT	Work Order Print Template			Designer/Work Order Templates/Printing tab/Microsoft Word Template field
WORESO	Work Order Resolution			Cityworks Server AMS
WOSTATUS	Work Order Status	CANCEL	Cancel	Work Order/General tab/Status field
		CLOSED	Closed	Search Work Orders For/General tab/Status field

## Code Types Needed for Cityworks Inspections & Tests

Populate all codes in Designer under **Others > Codes** by selecting the corresponding **Asset Group** and **Code Format**. Codes that begin with the letter **D** are populated under the **Storm**, **E** under **Electric**, **P** under **Park**, **R** under **Street**, **S** under **Sewer\***, and **W** under **Water**.

**NOTE:** The TV Inspection and Tree Inspection are the only ones which use the **Code Format** of **Codes, Descriptions, and Scores**. The **Code Type** of **STVOBSRV** is used for the TV Inspection unless the organization is utilizing PACP codes. (Be sure to change the **Use CCTV Codes** option under **Preferences** to **Y**.) **PTREEOBSRV** is on the Tree Inspection.

\*These **Sewer** codes can also be populated under **Storm**.

Asset Group	Inspection or Test Form	Codes and Descriptions		Descriptions and Scores	
		Code Type	Field	Code Type	Field
ALL	Custom Inspection (Inspection)	No defaults		No defaults	
	General Test	SGENTYPE	Test Type	None	
SGENUNIT		Unit of Measure			
Storm or Sewer	Dye Test	SDIAM	Diameter	SGRNDCND*	Ground Conditions
		SSURFC	Surface	SLEAKCAT *	Leak

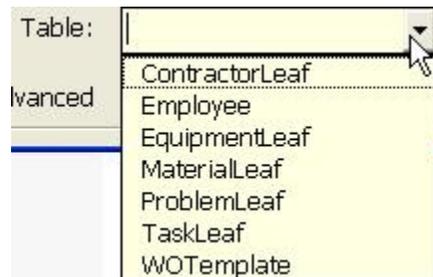
Asset Group	Inspection or Test Form	Codes and Descriptions		Descriptions and Scores		
		Code Type	Field	Code Type	Field	
					Category/Leak Type	
		STVOBPOS*	Position	SLEAKSRF *	Surface Cover	
				SLEAKTYP *	Leak Category/Leak Type	
				SPRECIP *	Precipitation Type	
				SUTSC *	Unable to Complete Due to	
	Inlet Inspection	DCBNMT	Basin	SBSNCND	Basin Condition	
		DFRAMEMT	Frame	SFLOW *	Flow Type	
		DGRATE	Grate Type	SFRMCND *	Frame Condition	
		DINLFEAT	Sub Type	SINLTCND	Inlet Condition	
		DLIDMT	Lid	SLIDCND *	Lid Condition	
		DSTATUS	Status	SPRECIP *	Precipitation Type	
	Manhole Inspection	SACCESS	Access	SFLOW *	Flow Type	
		SBNCHMT	Bench	SGRNCND *	Ground Conditions	
		SBRLMT	Barrel	SMHCOND	Condition	
		SCHANLMT	Channel	SMHLKCAT	Leak Category	
		SCONEMT	Cone	SMHLKTYP	Leak Type	
		SDIAM	Diameter	SPIPECND *	Condition	
		SFRAMEMT	Frame	SPONDCND *	Ponding	
		SLIDMT	Lid	SPRECIP *	Precipitation Type	
	Storm or Sewer (continued)	Manhole Inspection (continued)	SMHPART	Structural Parts (dropdown)	SSPOT *	Spot
			SMHTYPE	Sub Type		
SPIPEDIR *			Direction			
SPIPEMT			Material			
SRING			Ring			
SSTEPMT			Steps			
SSURFC			Surface			

Asset Group	Inspection or Test Form	Codes and Descriptions		Descriptions and Scores	
		Code Type	Field	Code Type	Field
		STSTMTHD	Test Method		
		STVOBPOS *	Position		
	Smoke Test	SDIAM	Diameter	SGRNDCND *	Ground Conditions
		SMBOMBTY	Type Smoke Bombs Used	SLEAKCAT *	Leak Category
		SSURFC	Surface	SLEAKSRF *	Surface Cover
		STVOBPOS *	Position	SLEAKTYP *	Leak Type
				SPRECIP *	Precipitation Type
				SUTSC *	Unable to Complete Due to
		TV Inspection	SDAREA	Drainage Basin	SDETERIO
	SDIAM		Diameter	SGRNDCND *	Ground Conditions
	SJOINT		Joint Type	SPRECIP *	Precipitation Type
	SLMETHOD		Lining Method	SSPOT *	Spot
	SPIPEMT		Material		
	SRSTAT *		Rehab Status		
	SSURFC		Surface		
	STVOBPOS *		Clock At/From		
	STVREASN *		Reason for Inspection		
	SVTRFMAT		VTR Format		
	Electric	Battery Inspection	None		None
Substation Relay Inspection (Induction Overcurrent Relays)		ESWITCH	Sub Type	None	
		ESWMODEL	Model		
		EWSMANUF	Manufacturer		
Meter Changeout		None		None	
Overhead Facility Inspection	EPOLCLSS	Class	None		
Electric (continued)	Overhead Facility Inspection (continued)	EPOLHGT	Pole Height		
		ETRNMAK	Manufacturer		
	Substation Inspection	ESSITYPE	Inspection Cycle	None	

Asset Group	Inspection or Test Form	Codes and Descriptions		Descriptions and Scores	
		Code Type	Field	Code Type	Field
	Automatic Reclose Operations (Substation Reclose Operations)	ERCCAUSE	Cause	None	
	Underground Facility Inspection	ETRNMAK	Manufacturer	None	
Park	Tree Inspection	None		None	
Street	Estimate - Crack Sealing (Crack Seal Estimate)	None		RSEALMAT	Sealant Material & Crack Size Factor
	Pavement Inspection  (Road Inspection)	RSIZUNIT	Sample Unit (dropdown)		
		RSMPYTYPE	Sample Type (dropdown)		
		RSRFMTRL	Surface Type (dropdown)		
Water	Hydrant Flow Test	None		None	
	Hydrant Inspection	WDEVSTAT	Status	None	
		WHYCLASS	Flow Class		
		WHYDRNT	Hydrant Type		
		WHYDWAT	Water Condition		
		WHYMK	Manufacturer		
		WHYVALV	Valve Type		
	Meter Changeout	None		None	
	Meter Test	WDEVSTAT	Status	None	
		WMETER	Sub Type		
		WMTMAKE	Manufacturer		
	Valve Inspection	WDEVSTAT	Status	None	
		WDIRECT	Direction to Close		
		WJOINT	Joint Type		
		WPOSIT	Operation Mode		
		WVLEAK	Location		
		WVLFUNC	Function		
WVLMMAKE		Manufacturer			
WVLTTYPE		Sub Type			

## Appendix 2: Cityworks Data Template Fields

Each Cityworks Data Template is listed in the dropdown order with the column headers, field type, number of characters, and other information found in the tips for each field to provide at-a-glance information for administrators.



### ContractorLeaf

Column Header	Field Type	Length	Null	Other Instructions
ContractorSID				Do not alter/add column values
ContractorName	text	35	Not null	
ContractorNumber	text	15	Null	
Description	text	50	Null	
RateType			Not null	A = Hourly B = Fixed C = Per Unit
Rate	numeric	(8,2)	Null	
OvertimeFactor	numeric	(3,2)	Null	
EmergencyFactor	numeric	(3,2)	Null	
OverheadType			Not null	A = Hourly B = Fixed
OverheadRate	numeric	(7,2)	Null	
ProviderType				000 = None 001 = Labor Only 010 = Material Only 001 = Equipment Only 011 = Material and Labor 101 = Equipment and Labor 110 = Equipment and Material 111 = All
Licensed			Null	Y or N
LicenseExpireDate	DateTime		Null	
LicensedWork	text	250	Null	
Address	text	256	Null	
City	text	50	Null	
State	text	50	Null	

Zip	text	20	Null	
CellPhone	text	50	Null	
OfficePhone	text	50	Null	
Email	text	256	Null	
LocallyBased			Null	1 = true 0 = false
Comments	text	256	Null	
ContactName	text	100	Null	
Viewable (Visible in Server)			Null	1 = true 0 = false
MWBE (Minority/Women Owned Business Enterprise)			Null	1 = true 0 = false
FederalTaxId	text	50	Null	
FMSNo	text	50	Null	
PIN	text	50	Null	
RegistrationDate	Date Time		Null	
OtherPhone	text	50	Null	
Fax	text	50	Null	
LiabilityInsCertificate	text	50	Null	
LiabilityInsEffectDate	DateTime		Null	
LiabilityInsExpireDate	DateTime		Null	
LiabilityInsAmount	numeric	(12,2)	Null	
WorkersCompCertificate	text	50	Null	
WorkersCompEffectDate	DateTime		Null	
WorkersCompExpireDate	DateTime		Null	
WorkersCompAmount	numeric	(12, 2)	Null	
AutomobileInsCertificate	text	50	Null	
AutomobileInsEffectDate	DateTime		Null	
AutomobileInsExpireDate	DateTime		Null	
AutomobileInsAmount	numeric	(12,2)	Null	
GeneralLiabilityCertificate	text	50	Null	
GeneralLiabilityEffectDate	DateTime		Null	
GeneralLiabilityExpireDate	DateTime		Null	
GeneralLiabilityAmount	numeric	(12, 2)	Null	
Custom Data Fields				
Keywords				Enter a comma-delimited list

## Employee

Column Header	Field Type	Length	Null	Other Instructions
EmployeeSID				Do not alter/add column values

EmployeeID	text	15	Null	Required for new entries
FirstName	text	15	Null	
MiddleInitial	text	2	Null	
LastName	text	30	Not null	Required for new entries
Title	text	40	Null	
Pager	text	24	Null	
WorkPhone	text	24	Null	
Email	text	256	Null	
Login Name	text	30	Null	
Hourly Rate	numeric	(5,2)	Null	
OvertimeFactor	numeric	(3,2)	Null	
HolidayFactor	numeric	(3,2)	Null	
OverheadType				Percent, Fixed
OverheadRate	numeric	(7,2)	Null	
Custom1-5				Retired fields
OvertimeType				Percent, Fixed
OvertimeRate	numeric	(5,2)	Null	
HolidayType				Percent, Fixed
HolidayRate	numeric	(5,2)	Null	
BenefitType				Percent, Fixed
BenefitRate	numeric	(5,2)	Null	
StandbyType				Percent, Fixed
StandbyRate	numeric	(5,2)	Null	
ShiftDiffType				Percent, Fixed
ShiftDiffRate	numeric	(5,2)	Null	
OtherRateType				Percent, Fixed
OtherRate	numeric	(5,2)	Null	
EmailReq	text	1	Null	
DomainID				Select from list
Organization				Select from list
DefaultImagePath	text	250	Null	
Password				Must use Designer
IsActive				Y or N
MapServiceID	numeric	(10,0)	Null	
Custom Data Fields				

### EquipmentLeaf

Column Header	Field Type	Length	Null	Other Instructions
EquipmentSID				Do not alter/add column values

EquipmentUID	text	20	Not null	Required for new entries
Description	text	56	Null	
Manufacturer	text	20	Null	
Model	text	15	Null	
RateType			Not null	A = Hourly B = Fixed
UnitCost	numeric	(7,2)	Null	
WarranteeDate	DateTime		Null	
Custom1-5				Retired fields
ForCheckout			Null	Y or N
DefaultImgPath	text	250	Null	
Viewable (Visible in Server)			Null	1 = true 0 = false
Custom Data Fields				
Keywords				Enter a comma-delimited list

### MaterialLeaf

Column Header	Field Type	Length	Null	Other Instructions
MaterialSID				Do not alter/add column values
MaterialUID	text	20	Not null	Required for new entries
PartNumber	text	20	Null	
Description	text	56	Null	
Manufacturer	text	20	Null	
Supplier	text	20	Null	
Model	text	15	Null	
MinQuantity	numeric	(5,0)	Null	
UnitCost	numeric	(11,2)	Null	
CostType				A = Weighted Average B = Current/User Defined LIFO FIFO
Detail	text	150	Null	
UnitMeasure				Select from list
AuditInterval				Select from list
Custom1-5				Retired fields
DefaultImgPath	text	250	Null	
GDBTableName	text	50	Null	
CUCategory				Select from list
GDBSubtype	text	8	Null	
Viewable (Visible in Server)			Null	1 = true

				0 = false
Custom Data Fields				
Keywords				Enter a comma-delimited list

### ProblemLeaf

Column Header	Field Type	Length	Null	Other Instructions
ProblemSID				Do not alter/add column values
ProblemCode	text	20	Not null	Required for new entries
Description	text	50	Null	
Priority				Select from list
SubmitTo				Select from list
ProbCategory				Select from list
Custom1-5				Retired fields
AutoClose				Y or N
DomainID				Select from list
ReqCustFieldCatID				Select from list
Cancel				Y or N
DispatchTo				Select from list
Duration	numeric	(7,2)	Null	
DurationUnit				H = Hours D = Days
SRPrintTmpt	text	50	Null	
Printer	text	100	Null	
ForPublicSite			Null	True or False
DefaultProject				Select from list
OtherSysCodeCWID	numeric	(10,0)	Null	
DefaultProjectSID	numeric	(10,0)	Null	
QAModel	text	10	Null	
Keywords				Enter a comma-delimited list

### TaskLeaf

Column Header	Field Type	Length	Null	Other Instructions
TaskSID				Do not alter/add column values
TextName	text	20	Not null	Required for new entries
Description	text	50	Null	
AssignedTo				Select from list
Shop				Select from list

Duration	numeric	(4,0)	Null	
DomainID				Select from list
Cancel				Y or N
AssignedToName				Select from list
NotifyMM			Null	Y or N
ResponseLabel	text	11	Null	
Comments	text	250	Null	
Keywords				Enter a comma-delimited list

## WOTemplate

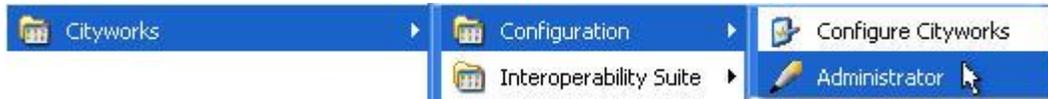
Column Header	Field Type	Length	Null	Other Instructions
WOTemplateID				Do not alter/add column values
Description	text	60	Not null	
ApplyToEntity				Select from list
Priority				Select from list
CreateDate	DateTime		Null	
NumDaysBefore (Printing)	numeric	(3,0)	Null	
MapTemplateName	text	250	Null	
WOMapExtent				Must be 'A'
WOMapScale	numeric	(6,0)	Null	
WOOutput				Print Options A: WO Only B: Map Only C: Both
WOCategory				Select from list
AccNum	text	20	Null	
Shop				Select from list
WOPrintTmpt	text	50	Null	
WorkMonth				12 characters of 1's and 0's, one char. per month 1 = Work Month 0 = No Work
CycleType				A = Never Repeat B = Repeat Once C = Repeat on Cycle
CycleIntervalNum	numeric	(4,0)	Null	
CycleIntervalUnit				D = Day W = Week M = Month Y = Year
CycleFrom				Actual Finish Date or Projected

				Start Date
DomainID				Select from list
WOCustFieldCatID				Select from list
DaysToComplete	numeric	(5,2)	Null	
Cancel				Y or N
AutoCreateTask				Y or N
Printer	text	100	Null	
Stage				Actual Proposed
ExpenseType				Maint (Maintenance) CIP (Capital Improvement)
CycleIncludeWeekends	text	1	Null	
DefaultProject				Select from list
WarrantyDuration	numeric	(10,0)	Null	
WarrantyDurationUnit	text	20	Null	
UnitsAccompDesc	text	40	Null	
UnitsAccompDescLock	text	1	Null	

## Appendix 3: Cityworks Desktop Administrator

**Cityworks Desktop Administrator** is a Cityworks form used to manage the connections to the geodatabase and the Cityworks database. The geodatabase connection must be set for each computer that uses Cityworks and can be accessed by any Cityworks user. However, the Cityworks database connection can only be accessed by the Cityworks domain administrator and must be set up per user on the user's machine.

1. From the **Cityworks** menu, select **Configuration** and then **Administrator** to open the login screen.

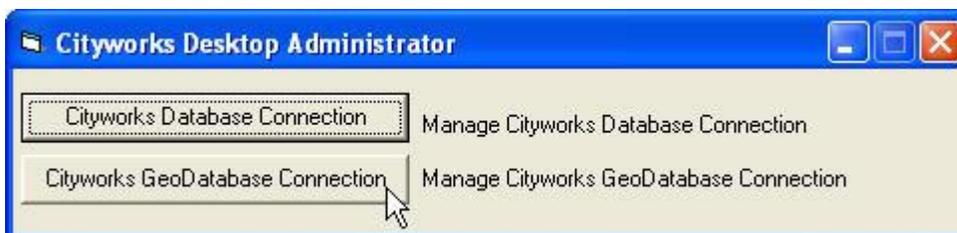


2. Log in as the Cityworks domain administrator (or any Cityworks user) to open the **Cityworks Desktop Administrator** form.

**NOTE:** Any user may set the Cityworks geodatabase connection (through step 6); however, only the Cityworks domain administrator can access the Cityworks database connection information.

A screenshot of the Cityworks login dialog box. The title bar says 'Cityworks'. The main area contains the Cityworks logo (the word 'Cityworks' in a stylized font with three colored spheres: blue, green, and red). Below the logo are three input fields: 'Database' with a dropdown menu showing 'BThomasville', 'User ID' with the text 'azteca', and 'Password' with seven asterisks. To the right of the password field are 'OK' and 'Cancel' buttons. Below the input fields is a 'Save Password' checkbox which is checked. At the bottom left, there is a link for 'Version Information' and the text 'Copyright Azteca Systems 1996-2006'.

3. Click on the **Cityworks Geodatabase Connection** button to open the **Configure Cityworks Geodatabase** form.



4. Select the radio button option for the **Geodatabase Type** to use with Cityworks.
  - **Access Personal Geodatabase**
  - **File-based Geodatabase**
  - **ArcSDE Geodatabase**



5. Click in the field at the bottom of the form and browse to the desired geodatabase or geodatabase connection to load it in the field.

**NOTE:** For questions, contact the GIS administrator.

6. Click the **Save Geodatabase Connection** button and close the form.

**NOTE:** The **Save GeoDatabase Connection** button is grayed out next time the form is opened until either the **Geodatabase Type** or path is changed as this just needs to be done once per computer unless a change is made.



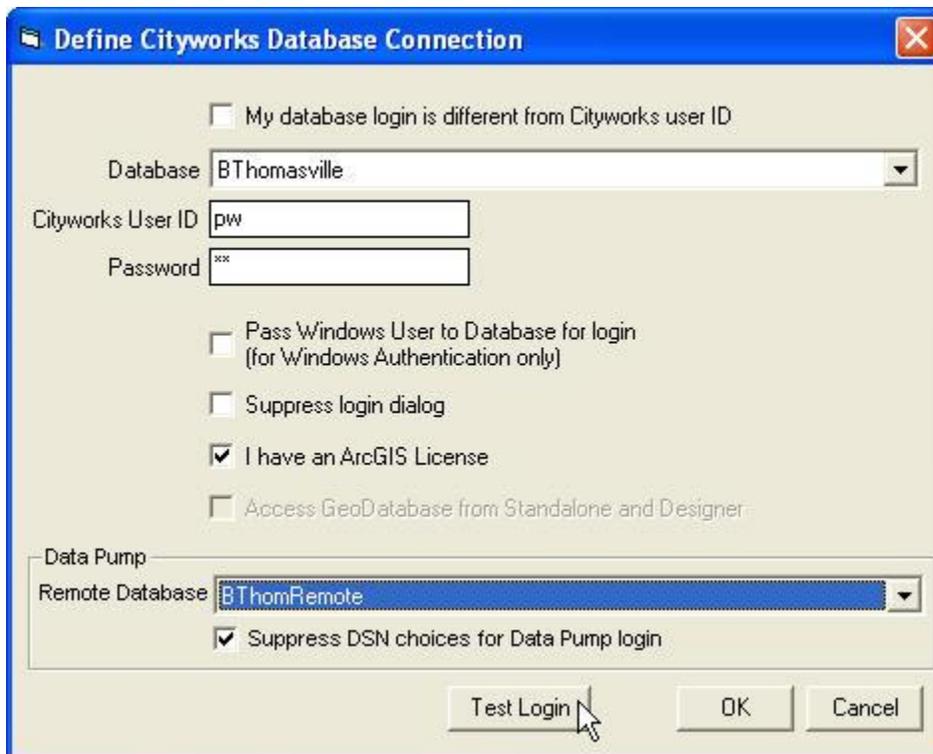
7. Click on the **Cityworks Database Connection** button to open the **Define Cityworks Database Connection** form for setting up the Cityworks database login configuration.

**NOTE:** The **Cityworks Database Connection** button is only active for the Cityworks domain administrator.



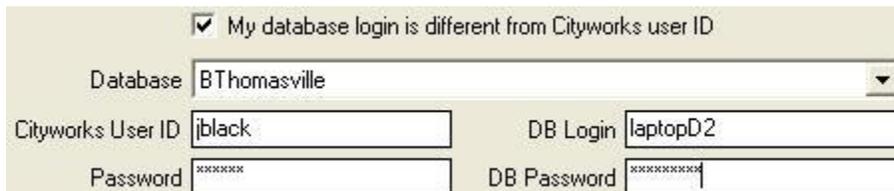
8. Fill in the information to set the Cityworks database connection and logins.

**NOTE:** The **Define Cityworks Database Connection** form is completely blank the first time it is opened. Checking some of the boxes activate other fields as shown below.



- **My database login is different from Cityworks user ID** checkbox—Check if the user logs in with a different login and password than is used to log in to the Cityworks database. Type in the **Cityworks User ID** and **Password** and the **DB Login** and **DB Password**.

**NOTE:** The **Cityworks User ID** and **Password** and the **DB Login** and **DB Password** is a 1:1 relationship so a **DB Login** cannot be used more than once.



- **Database** field—Select from the dropdown selection of ODBC data sources which have been configured on each computer.
- **Pass Windows User to Database for login (for Windows Authentication only)** checkbox—Check if using Windows authentication for passwords.

My database login is different from Cityworks user ID

Database: BThomasville

Cityworks User ID: Garth Arrington

Password: [Empty]

Pass Windows User to Database for login (for Windows Authentication only)

Suppress login dialog

I have an ArcGIS License

Access GeoDatabase from Standalone and Designer

- **Suppress login dialog** checkbox—If there is only one user per computer, the Cityworks login screen may be bypassed. Suppressing the dialog box activates the checkbox for **Access GeoDatabase from Standalone and Designer**.

**NOTE:** Suppressing the login dialog box only allows access to one Cityworks database. However, users cannot access the functionality on the login screen, such as changing the Cityworks database, viewing the **Version Information** which may be helpful during troubleshooting, or accessing the geodatabase when logging in to Cityworks Standalone or Designer.



Database: BThomasville

User ID: pw

Password: \*\*

[Version Information](#)

Copyright Azteca Systems 1996-2006

Save Password

Access Geodatabase

OK Cancel

My database login is different from Cityworks user ID

Database: BThomasville

Cityworks User ID: Garth Arrington

Password: [Empty]

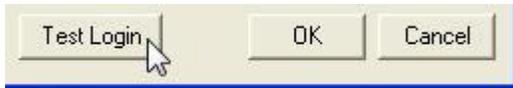
Pass Windows User to Database for login (for Windows Authentication only)

Suppress login dialog

I have an ArcGIS License

Access GeoDatabase from Standalone and Designer

- **Access Geodatabase from Standalone and Designer**—Check this box if the **Suppress login dialog** is being used but the geodatabase needs to be accessed from Standalone (for searching the asset inventory) or Designer (to use the **Asset Setup** functionality).
  - **I have an ArcGIS License** checkbox—Check on each computer that is running Cityworks with ArcGIS Desktop or ArcGIS Engine. When checked, Cityworks utilizes the existing license for any ArcGIS application running on that computer which has already been checked out from the license manager. If the box is not checked, a new ArcGIS license is checked out.
9. Click the **Test Login** button at the bottom of the form to verify that the ID and password work for logging into the Cityworks database.



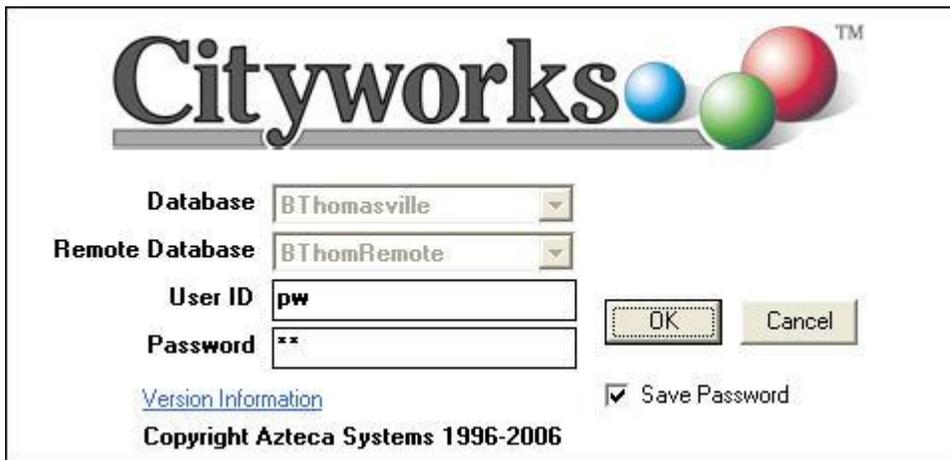
A message box confirms if the login was successful. Click **OK** to close the message.

If the login is unsuccessful, a message box opens to tell the user that the login to the Cityworks database failed. Click **OK** and reconfigure the settings until the login is successful.

10. Optional for computers running DataPump: Select the **Remote Database** created to use out in the field with DataPump from the dropdown selection of available databases.



The box for **Suppress DSN choices for DataPump login** may be checked to prevent the user from changing the databases on the DataPump login screen. If the box is unchecked, both database fields will be available to the user.



11. Click **OK** to close out of the **Define Cityworks Database Connection** form.

# Glossary of Terms

## **.mxd**

The file extension used for a GIS project file or ArcMap document. A map document can be printed or utilized by other software programs, such as in Cityworks Anywhere.

## **access rights**

Privileges or permission for user groups to view, add, update, delete, and view cost for request and work order templates to provide security to Cityworks.

## **add-on**

A separate application designed to complement another product with which it integrates or shares common data by giving it additional capabilities. It works in conjunction with a primary software application and has no value without it.

## **address locator**

A dataset in ArcGIS for storing the address, attributes, associated indexes, and rules that define the process for translating nonspatial descriptions of places, like street addresses, into spatial data that can be displayed as features on a map. It contains the reference data used for geocoding and parameters for standardizing addresses, searching for match locations, and creating the output. Address locator files have a .loc extension and the file must be loaded into the .mxd for geocoding to work in ArcMap.

## **API**

An application programming interface is a set of calling conventions, functions, or procedures by which an application program accesses the operating system and other services. An API is defined at the source code level to ensure the portability of the code between the application and other privileged utilities. An API can also provide an interface between a high-level language and lower-level utilities and services written without consideration for the calling conventions supported by compiled languages. The API's main task in that case is to translate parameter lists from one format to another and interpret the call-by-value and call-by-reference arguments in one or both directions.

## **application**

A software program or group of programs that can run independently to help a user carry out a task, such as word processors, spreadsheets, database management systems, Cityworks, etc.

## **ArcCatalog**

Esri's GIS desktop application for managing spatial data, organizing geographic data, recording/viewing metadata (data about data), creating geodatabases to store feature datasets and feature classes, creating address locators, and distributing GIS data to an existing map in ArcMap.

## **ArcEditor**

An Esri license for ArcMap that contains all the functionality of ArcView plus advanced editing capabilities to update attributes in the geodatabase. ArcMap utilizes CAD editing tools that can construct features quickly and easily while maintaining the spatial integrity of the geodatabase.

## **ArcGIS**

Esri's integrated collection of GIS software products for building a complete GIS. Their three desktop applications consist of ArcCatalog, ArcMap, and ArcToolbox (for geoprocessing).

## **ArcInfo**

An Esri license designed for advanced GIS users which adds advanced geoprocessing functionality to the ArcEditor capabilities.

## **ArcMap**

Esri's ArcGIS desktop application for composing and publishing professional maps as well as creating, viewing, editing, querying, and analyzing geographic data and associated tables. ArcMap is used for all mapping, editing tasks, and map-based analysis (which places tabular data on the map in hopes it will reveal spatial patterns, relationships, or trends). Esri has three levels of licensing for ArcMap: ArcView, ArcEditor, and ArcInfo.

## **ArcSDE**

A gateway to a commercial RDBMS which serves as an open, high-performance spatial data server that employs client/server architecture to perform efficient operations and manage large amounts of shared geographic data.

## **ArcView**

An Esri read-only license for ArcMap which provides comprehensive mapping and analysis tools with some simple editing and geoprocessing tools.

## **assembly**

A material assembled from multiple materials which groups the required parts and can include the associated labor and equipment costs for use in Miner & Miner's Designer application.

## **asset group**

A collection of specific groups of features and related objects in ArcGIS and Cityworks.

## **assets**

Property or inventory stored in the geodatabase as features or related objects that have associated maintenance activities.

## **attribute**

A characteristic or quality of an object, such as its name, measure, or identifier. An attribute is stored as a column or field in a database.

## **attribute domain**

A valid value table that stores available characteristics, qualities, or numeric ranges for an object; e.g., measurement, count, classification, category, condition, type, or other identifier.

## **call-level interface**

A programming interface designed to support SQL access to databases from off-the-shelf application programs with a set of client-server tools that can easily access databases through dynamic link libraries (DLL).

## **CCTV**

Closed-circuit television; a CCTV system uses a special remote-controlled camera to videotape systems that are too small or too dangerous for people to get into, including stormwater/wastewater/water systems, treatment plants, electrical conduit, etc. The condition can then be assessed by viewing the video.

## **CCTV Interface for PACP**

A Cityworks add-on product that exports Cityworks work order data to a blank PACP exchange database to populate the pipe segment IDs and other mapped fields to any third-party database to perform a TV inspection. The TV inspection data is then imported into the Cityworks TV Inspection form associated to the work orders.

## **checkbox**

A square box which clicks on/off as indicated by a checkmark. Any or all options may be selected.

## **Cityworks**

A GIS-centric, location-based software application for creating service requests and work orders and tracking maintenance history. This AMS (Asset Management Solution) is configurable for any geodatabase asset model and can be used for managing infrastructure for public works and utilities—water, wastewater, stormwater, electric, streets, traffic, plants, etc.

## **Cityworks database administrator**

The person in charge of establishing and maintaining the Cityworks database structure and creating the domains.

## Cityworks Designer

A Cityworks database administrative tool for configuring and customizing Cityworks. This application allows the Cityworks database administrator and Cityworks domain administrators to set up domains, materials, equipment, employees, user groups and rights, request and work order templates, tasks, custom inspections, preferences, and security.

## Cityworks domain administrator

The person responsible for the majority of the Cityworks configuration and overseeing a domain with full access rights to requests and work orders.

## Cityworks Server AMS

A state-of-the-art, browser-based asset management solution which has been built on Esri's ArcGIS Server technology which allows a high level of customization capabilities and the ability to support loose coupling to other systems. Users need a browser (Azteca uses and recommends Firefox) and Microsoft Word Viewer installed on their computers. Generally, at least two servers are required: one for the web, ArcGIS, and Cityworks and another server for the ArcGIS geodatabase and the Cityworks work management data. Three different deployment options are available: full, service requests only, or read-only. In November 2010, the name was changed from Cityworks Server MMS (Maintenance Management System) to Cityworks Server AMS (Asset Management Solution) to reflect its nature as a true asset management solution. [**NOTE:** *Azteca recommends that users employ the Firefox browser when using Server because it has adhered to the W3C (World Wide Web Consortium) guidelines. The use of another browser will cause the Server to render more slowly and images may be lost.*]

## Cityworks Server PLL (Permits, Licensing, and Land)

A GIS-centric community development software that is fully integrated with Cityworks Server AMS, allowing permit, license, and land data to be viewed in the same environment as the GIS asset data, work orders, and/or service requests. It enables agencies to track permits, planning and development applications, engineering construction processes, business licenses, code enforcement cases, and land development work, from initiation to closure. The built-in workflow engine efficiently tracks all applicable tasks, beginning with the initial application or customer call through the complete process of departmental plan reviews, planning commission meetings, issuance, inspections, signoffs, abatement, hearings, applications, renewals, fee calculations, payments, tasks, and more. It can track land, such as parcels, street segments, or any land object, along with the associated data, or cases which store transaction data for permits, applications, and/or code enforcement processes.

### class

A set of similar objects where each object has the same set of attributes. A class is stored as a table which consists of a matrix of rows that represent objects and columns that represent attributes.

### data

A collection of related facts usually arranged in a particular format and gathered for a particular purpose.

## **data model**

A representation of something in the real world.

## **database**

A logical data model constructed to represent the objects of interest through the use of related tables for data entry and transfer to a computer application.

## **DataPump**

A check-out system for Cityworks which saves service requests and/or work orders and related inspections to a SQL Server 2005 Express database on a PC notebook for field access and updating. Checked-out items can still be viewed by any Cityworks user but can only be updated by the user who has checked them out. The central database is updated at check-in. DataPump is designed for users who don't have a wireless WAN (wide-area network).

## **dataset**

A named collection of logically-related data items arranged in a prescribed manner.

## **delimiter**

A symbol or character used to separate or indicate the beginning or end of data items, character strings, words, or fields in a database, source code, or text file. A blank space, comma, tab, semicolon, or other symbol may serve as a delimiter.

## **device**

A term in ArcView 3x for related object.

## **Dig-Smart**

A software program that uses Esri's ArcGIS to provide an all-encompassing, geospatial solution for one-call ticket management to service all public and private sector utilities with a call-before-you-dig requirement. The core product, Dig-Smart Enterprise, was developed to help utilities manage their daily excavation requests. Dig-Smart, LCC (Limited Liability Corporation), is NASGC-certified. Cityworks provides a Dig-Smart Interface which generates requests for underground pipe and cable locating. See their website for more information at [www.dig-smart.com](http://www.dig-smart.com).

## **DLL**

Dynamic Link Library; a collection of executable functions or data used by a Windows application to provide one or more particular functions which are accessible through either a static link (remains constant during the program's execution) or dynamic link (created by the program as needed).

[**NOTE:** DLL files usually end with these extensions.

- *.dll—Dynamic Link Library (Windows 3.x – OS/2)*
- *.exe—directly executable program (DOS)*
- *.drv—device driver, such as for a printer*
- *.fon—font file (Windows 3.x font library)]*

## **domain**

A distinctive group with shared work activities and resources, such as a department or multiple departments. Cityworks uses domains to set up its work management system and security.

## **end user**

A user who runs an application program. In Cityworks, an end user has access to the Cityworks work management system as defined by the group rights specified in Designer.

## **entity**

In Cityworks, entity is considered the same as an asset.

## **Equipment Manager**

A Cityworks add-on product for checking out, returning, reserving, and tracking equipment as well as keeping a history of equipment and employee usage.

## **Esri**

Environmental Systems Research Institute, Inc.; a company established as a consulting firm specializing in land use analysis projects and currently is the largest worldwide research and development organization dedicated to designing software and developing GIS technology. For more information, see their website at [www.Esri.com](http://www.Esri.com).

## **export**

To take data out of one application in a format that can be used in another application.

## **extension**

A program which extends an application by increasing its functionality and broadening its capabilities, such as when Cityworks Desktop is used in conjunction with ArcMap. Extension can also refer to a file extension which is a short character suffix following the period (dot) after the filename or root name indicating the type of information stored in the file.

Examples of file extensions include:

- **.com** indicating it is a command file
- **.exe** for an executable program
- **.mxd** for an ArcMap document or GIS project file
- **.txt** for a text file
- **.doc** or **.docx** for a Microsoft Word document file
- **.xls** or **.xlsx** for a Microsoft Excel file
- **.jpg** for a JPEG (Joint Photographic Experts Group) image
- **.tif** for a tagged image file
- **.bmp** for a Windows Bitmap image

## **feature**

A discrete object on a map that has geometric shape (point, line, or polygon); a spatial object that can exist above or below ground and typically remains in one location during its lifespan, such as a mainline, manhole, or pump station.

## **feature class**

A database table for storing spatial objects that uses a geometry field to keep the shape (point, line, area, or annotation) and location of the features. A feature class may have subtypes and attribute rules. An object class becomes a feature class when the geometry is added.

## **feature dataset**

A collection of feature classes that shares the same spatial reference which enables them to participate in topological relationships, such as geometric network, linear network, or topology.

## **FIFO**

A cost type for use in the Cityworks Storeroom add-on which utilizes the “first in, first out” inventory method of using the older unit costs first for parts distributed until the older inventory is gone and then uses the newer unit costs for the newer inventory.

## **geocoding**

The process of creating geometric representations for locations of point data from descriptions of locations, such as addresses, intersections, x-y coordinates, etc.

## **geodatabase**

A geographic database hosted inside an RDBMS for managing geographic data. This collection of complex geographic data includes spatial, topological, and attribute information for a set of objects and features with their relationships which allows for geographic data storage, referential integrity constraints, map display, feature editing, and analysis functions.

A geodatabase contains:

- feature classes
- feature datasets
- object classes
- relationship classes
- attribute domains

## **geoprocessing**

An operation which is performed on an input dataset to return the result as an output dataset which defines, manages, analyzes, and manipulates the information stored in a GIS for formulating decisions. Geographic feature overlay, feature selection and analysis, topology processing, and data conversion are common geoprocessing operations.

## **GIS**

Geographic Information System; a data system which collects, processes, stores, manages, retrieves, analyzes, manipulates, displays, and reports spatial data for phenomena on, above, or below the earth's surface. GIS links information or data to a geographic location.

## **GIS workspace**

An Esri ArcGIS programming object created by the software which is used to open the connection to the geodatabase when Designer accesses the geodatabase.

## **hierarchy**

A data structure for storing information in folders and subfolders; similar to an electronic filing system. Cityworks uses tree and hierarchy interchangeably in the software, even though hierarchy generally implies ranks or graded elements. These structures are user-defined and elements may be placed in multiple locations or groups to facilitate data entry for the end user.

## **import**

To bring in data from an existing file which was produced by another application. Importing data is important in software applications because it allows one application to complement another application and reduces the need for additional data entry.

## **initialize**

Process of starting up or opening a program where all of the general settings and forms needed are loaded.

## **interface**

A link which passes data between two databases or programs by changing data in one format to what the other system requires. There is no communication between the actual applications.

## **keyword**

A reference point for finding information. In Cityworks, a user-defined word or abbreviation end users can enter to access information. Keywords can be set up for request templates, tasks, employee groups, contractors, materials, equipment, etc.

## **LIFO**

A cost type for use in the Cityworks Storeroom add-on which utilizes the "last in, first out" inventory method of using the most recent costs first when distributing parts until the newer inventory is gone and then uses the older unit costs when the older inventory is distributed.

## **login**

A user name and password typed into a network environment to allow the user to execute or access the program and thereby protect against its unauthorized use.

## **macro**

A series of commands, actions, or keystrokes that perform a whole series of actions. A macro is executed in the same order each time it is run. Cityworks uses macros for its print and email templates. The macro variable points to another variable where the data is actually stored.

## **NASSCO**

National Association of Sewer Service Companies established as a not-for-profit trade association by a small number of sewer service contractors who recognized the benefits of establishing industry standards for the pipeline rehabilitation industry. They are the leading resource for specification guidelines, industry practices, inspector training, and new technology know-how for sewer system rehabilitation. See their website at [www.nassco.org](http://www.nassco.org) for more information.

## **network**

A collection of computers and other devices that have been connected to share data, hardware, and software which requires a login to protect against unauthorized users.

## **object**

A basic element representing an entity, such as a building, river, tree, sign, or customer. An object is stored in a row in an object class within the database.

## **object class**

A collection of objects in the geodatabase that have the same behavior and the same set of attributes. All objects in the geodatabase are stored in object classes. A table in the database for an object becomes an object class when geodatabase intelligence is added to it, such as an object ID or class ID.

## **ODBC**

Open Database Connectivity; serves as a standard software API method for accessing different database systems by providing an interface between an application which submits statements to ODBC which then translates these statements to what the database understands, independent of programming language, database system, or operating system. ODBC is based on call-level interface with interfaces for Visual Basic, Visual C++, and SQL and drivers for Access, Paradox, dBase, Text, Excel, and Btrieve databases.

## **PACP**

Pipe Assessment and Certification Program implemented by NASSCO to standardize sewer pipe condition. Because of the standard PACP format which defines fields, formatting, and valid entries, Cityworks CCTV Interface for PACP can be used to create the PACP database for exchanging information between the two systems.

## **program**

A set of variables and detailed, step-by-step instructions that tells a computer how to use the variables to solve a problem or carry out a task.

## **radio button**

A round option button which allows only one selection to be made for the group.

## **RDBMS**

Relational Database Management System, such as SQL Server or Oracle; a database management system with the ability to access data organized in tabular files that can be related to each other by a common field.

## **related object**

An object from an object class not usually displayed on a map but related to a mapped feature at some n-level in the geodatabase. A related object is associated with a feature through a relationship class defining which related objects belong to the feature, such as a pump station (feature) containing pumps, motors, and valves (the related objects). Related objects may move to different locations in the network during their lifespan but their maintenance history can be tracked through Cityworks. Related objects are stored as tabular entries with no graphic representation. Cityworks requires that an object is related to a feature at some n-level. ArcView 3x uses the term **device** for related object.

## **relationship**

An association or link between two or more objects in a geodatabase, such as features in feature classes or a feature with its related objects. Relationships are stored as rows in a table or as a foreign key field in the dependent object class.

## **relationship class**

A table that stores relationships or dependencies between features or objects in two feature classes or tables.

## **role**

A classification for user groups assigned in the database to control access to the resources based on the predefined access rights for the group. Each user is assigned to one or more roles and each role is assigned to one or more privileges. A role provides the ability to give database rights to multiple users by including them in the role. All Cityworks users must have the Create View right, which is provided by adding them to the PWDB\_USER role.

## **SDE**

Spatial Database Engine; provides an enterprise-wide repository for spatial and attribute data within the RDBMS. Its client/server architecture and built-in spatial analysis and query tools allow efficient access, management, storage, and distribution of spatial and attribute data throughout a network. See Esri's website at [www.Esri.com](http://www.Esri.com) for more information.

## **SID**

A system-generated ID field (numeric field of up to 10 characters) in Cityworks used for identifying employees, contractors, request problems, work order tasks, permits, projects, materials, equipment, assets, and entities. The SID fields are frequently used as links between the various Cityworks tables.

## **software**

A set of statements or instructions and associated data used directly or indirectly by a computer that specifies how to process data and accomplish a task. Computer software may include more than one computer program.

## SQL

Structured Query Language; provides basic syntax constructs for defining and manipulating tables of data for creating, updating, and querying RDBMS.

## Storeroom

A Cityworks add-on product for tracking materials and managing multiple storeroom locations, including work vehicles. It handles functions from requisitioning to distributing materials and performing audits with special search capabilities to help maintain the desired stock on hand.

## superuser

A login for Cityworks Designer with access to both the Cityworks database administrator and domain administrator functions. However, since a superuser cannot be a member of any domain group, this login cannot access the Cityworks work management system (as an end user must belong to a group with specified rights).

## table

A set of non-spatial data elements that has a horizontal dimension (rows) and a vertical dimension (columns) in an RDBMS (database). A table has a specified number of columns but can have any number of rows. In ArcGIS, table often refers to an object class without geometric shape; a row in the table is referred to as a related object or asset.

## task

A definite and specific act of work. Tasks in Cityworks are set up by the organization outlining the steps that must be followed to complete a work activity and track related costs.

## template

An electronic file predesigned to generate the desired information including the location and length of fields to display that link to data that can be filled in and used to generate forms for printing or emailing. Cityworks uses templates to print service requests and work orders as well as email callers and employees. Default templates are available or custom forms may be created and used as long as they are stored in the **Templates** file of the Cityworks directory. Template is also used in Cityworks Designer to refer to the predefined settings for each type of request or work order.

## topology

Relationships between connected features in a geometric network or shared borders between features.

## tree

A data structure for organizing computer storage where the elements are interconnected and the trunk represents the root directory, branches are folders and may be split into smaller branches or subfolders, and

leaves represent the individual files or parts. While it differs from a hierarchy because its organization lacks ranks or graded elements, the terms are used interchangeably in Cityworks.

## **UID**

A user-defined ID field (a variable character field of 17, 20, 35, or 40 characters) used in Cityworks to identify entities, devices, materials, equipment, suppliers, and sections. The UID can also be used as a field for linking Cityworks tables.

## **URL**

Uniform Resource Locator provides the global address of documents or other resources on the web. Attachments in Cityworks may be loaded with paths to websites or documents on a local network.

## **user**

Any individual who uses a computer. In the database, a user is assigned to a role or multiple roles which allows the user's login to access the information and use the software.

## **weighted average**

A cost type for use in the Cityworks Storeroom add-on which totals all the costs for the selected material divided by the number of units on hand to calculate the cost of an item.



# Index

## A

- access geodatabase 2
- account 68, 171, 183, 234, 291
- actions tab (asset reading) 173
- add
  - asset types to inspections 167
  - employees to group 51
  - features to asset group 158
  - map layer to request 63
  - new customer 234
  - objects to asset group 158
  - Server AMS users 202
  - Server PLL users 202
  - Storeroom domain administrator 25
- Add/Modify tab (codes) 209
- Additional Configuration tab (asset reading) 176
- administration 19
- analyze entity IDs (geodatabase sync) 178
- asset group definitions 156
- assign
  - asset groups 20
  - cost codes 40
  - database administrators 19
  - feature class to group 158
  - features/objects to asset group 158
  - rights to custom inspections 143
  - rights to Storeroom groups 185
  - Server users 51

- storerooms 25
- assign assets tab 158
- assign employee
  - event layers 46
  - groups 43
  - map layer 60
  - permissions 31
  - task 75
  - to domain groups 51
- associate
  - inspections to asset types 167
  - labor to asset or task 40
  - task to WO template 75
  - WO template to request 65
- attachments 31, 55, 60, 87, 111, 116
  - answers on request template 60
  - employee 31
  - equipment 111
  - WO template 87
- audit
  - interval for materials 183
- audit permission in Storeroom 185
- audit settings 194
- azteca login
  - remove 19

## B

- background color
  - customize layout label option 267
- backup

- CW database before gdb sync 178
- blue text (CW data template) 256
- bold field label 267
- border on field label 267
- branch (Q/A model) 55, 137, 140, 217
- branch Q/A model (request) 137
- budget plan tab 91
- button
  - build tree 14
  - functions 6
- C**
- calendar 8
- call taker questions 60
- cancel
  - information in CW 17
  - task 132
  - WO generated by incorrect reading 177
- category 14, 55, 68, 99, 105, 145, 242
- category (hierarchy) 54, 105, 115, 131, 191
- CCTV inspection codes 213
- CCTV tab 213
- certification
  - employee 38
  - pipe assessment (PACP) 213
- change
  - CW asset forms 163
  - labels on CW forms 267
  - permissions for employee groups 146
  - table on CW data template 252

- check in/out equipment 111
- checkbox
  - asset groups owned by SDE 156
  - delete all records (customer account) 237
  - delete all records (street names) 239
  - notify M M 132
  - reset all controls to default 267
  - show tables owned by SDE (GIS attribute updates) 198
  - show tables owned by SDE (inspection asset edit fields) 197
  - use alternating colors 142
  - use mobile asset tracking system 156
- Cityworks asset form
  - asset identify form 155, 156, 159
  - customize 163
  - store images for 159
- Cityworks Asset Identify Form 159
- Cityworks data
  - add tree items 13
  - problem leaf 14
- Cityworks database
  - manager 1
  - manager add Server tables 188
- Cityworks domain administrator
  - assign login 19
  - set custom employee info 30
- Cityworks inventory editor 159
- Cityworks Server
  - add asset edit fields to inspection 197

- add valid Server tables 188
- additional configuration 190
- contract line items 191
- custom rating method 137
- edit GIS attributes 198
- set up functions 188
- set up map documents and geolocating 195
- WO:request relationship 65
- classes
  - rule set values 153
  - tab for WO template classes 152
- clear
  - button 6
  - fields on Server panel 142
  - worksheet on CW data template 256
- clone 66, 98, 132, 191
  - request template 66
  - task 132
  - WO template 98
- codes
  - AEMPSKIL 38
  - CCTV codes 213
  - Cityworks 209
  - employee skill sets 38
  - format 209
  - other system 246
  - others 291
  - predefined inspections 295
  - Server contacts 191
  - Storeroom 183
- collapse navigation tree 5
- color coding
  - customize CW form 267
  - CW data template import 253
  - CW data template update 256
- columns
  - resize 7
  - width on custom Server inspections 142
- comments
  - add to WO template 87
  - asset reading 173
  - permit 134
  - predefined for request 145
  - task 132
  - task on WO templates 75
- comments (request) 55
- comments (work order) 87
- commit gdb sync 178
- common errors for CW data template 264
- configure
  - asset inspections 167
  - Cityworks.xml file 28
  - CW asset form 163
  - CW asset form display fields 159
  - isolation trace 171
  - Server panel on custom inspection 142
- connect GeoDB 3
- context menu

- change view 5
- CW data template 251
- contractor
  - information 105
  - provided materials 105
- contractor-provided equipment 86
- contractor-provided materials 83
- contracts 191
- convert Excel file to text 11
- copy
  - data from another worksheet 261
  - event layers 46
  - macros 243
- correct asset reading 177
- cost
  - assign labor codes 40
  - employee permissions to view 146
  - labor codes 78
  - materials 81
  - tables 63, 89
- cost codes tab 214
- count assets for reading 176
- create
  - custom field templates 99
  - domain groups 51
  - new event layer 46
  - new storeroom location 25
- cursor
  - arrow with double bar 17
  - double arrow 7
- custom
  - contractor fields 105
  - Dig-Smart fields 27
  - employee cost codes 214
  - employee fields 31
  - employee job codes 215
  - employee labor rates 40
  - equipment fields 111
  - field templates 99
  - fields on CW forms 263
  - inspection (Server fields) 197
  - inspection security 146
  - inspection templates 135
  - map templates 88
  - names of custom print templates 284
  - print templates 88
  - rating method (Server) 137
  - template macros 243
  - update gdb when close WO 198
  - values for smoke testing 231
- custom asset tab
  - custom data fields 216
- custom data fields 263
- customer accounts 234
- customize
  - Cityworks 1
  - CW asset forms 156
  - CW forms 267

- request layout 267
- request templates 53

## D

- data validation 256

- database

  - field names on import 11
  - view 3

- database administrator 19

- DataPump

  - set number of checkout IDs 217

- date

  - custom fields 99
  - range for employee job codes 215

- date fields 8

- default

  - button on customize layout 267
  - code type values 291
  - custom field values 99
  - date 8
  - field value tables 8
  - general tab (preferences) 217
  - image directory 159
  - inspections on WO template 97
  - restore on CW asset forms 163

- define

  - asset groups 156
  - codes for employee cost 214
  - codes for employee jobs 215
  - codes for field value table 9

  - custom categories 99

  - custom inspections 135

  - GIS layers for work order assets 156

  - map layers/fields 233

  - new code type 209

  - permits 134

  - valid values for observations 144

- delete

  - all records from CustomerAcct table 237

  - all records when importing street names to CustomerAcct table 239

  - asset reading 177

  - buttons 6

  - custom inspections 137

  - employee cost codes 214

  - employee job codes 215

  - from CW data template 259

  - from hierarchy 14

  - leak category 231

  - other system code 246

  - permissions on request 63

  - permissions on WO 89

  - request labor 63

  - rights on custom inspections 143

  - Server contract 191

  - task from database 132

  - task from WO 75

  - valid values for observations 144

- delimited text file

  - codes 212

- customer accounts 237
- street names 239
- delimiter 11
  - WO template classes 153
- Designer
  - rights to tables 149
  - Server configuration 190
  - tools 3
  - version information 3
- Dig-Smart 27
- directory
  - collapse/restore 5
- disable
  - information in CW 17
  - task 132
  - WO generated by incorrect reading 177
- DisconnectGeoDB 3
- dispatch to
  - based on request location 60
  - update request templates 66
- display
  - asset ID field on CW asset forms 159
  - asset reading field 173
  - custom fields 99
  - field for CW asset forms 163
  - field for CW asset ID 156
  - field for materials stock search 128
  - gdb relationships 162
  - materials on WO 115
- display fields tab
  - asset group definitions 156, 159
- distribute password 29
- district
  - domain 20
  - domain groups 51
  - request 63
- domain 20
  - asset groups 156
  - custom inspections 143
  - Dig-Smart 27
  - employee groups 31
  - global settings 217
  - groups 30
  - groups setup 51
  - holidays 230
  - Storeroom 183
  - template security 146
- domain administrator 20, 23, 25
- drag/drop into 14
- dropdown selection
  - custom field templates 99
  - field value tables 8
  - populate employee lists 149
- dynamic cost
  - employee cost codes 214
  - employee job codes 215
  - WO labor codes 78

## E

### edit

after close 149

ConfigureCityworks.xml 28

CW data 255

multiple request templates 66

multiple values 249

request question answers 60

Server custom inspection fields 197

### edit/add customer account tab

customer accounts 234

### email

contractors 105

email settings tab 226

email template 274

### employee 30

cost codes 214

group rights 149

job codes 215

labor for material assembly 78

permissions for costs 146

relates 149

skill sets 38

tab 31

employees tab 31

encrypt login 29

equipment 20, 84, 86, 91, 105, 111, 122, 123,  
125, 149, 216, 217, 249

domain 20

information 111

equipment manager 111

### equipment tab

WO templates 84

### Esri License

view 3

### estimated

days to complete task 132

equipment on WO 84

labor for material assembly 78

on WO 68

### event layers 46

### Excel

CW data template 249

paste special 261

explanation on custom inspections 140

export data sheet 255

## F

failed gdb sync 178

favorites in Miner & Miner Designer 242

features 158, 170

asset reading 176

update gdb when close WO 198

field is active 17

### field mapping

code to another system 246

### field value

tables 8

update attributes in gdb when close WO 198

### fields

- other system codes 246
- file
  - load WO template classes 153
- filter
  - inactive employee search 44
  - records in gdb sync 178
- find items in hierarchy 14
- fixed
  - contractor rate 105
  - cost codes 40
- flat rate employee job codes 215
- folder
  - for print templates 281
  - structure 5
- format
  - answer on custom inspections 140
  - answers request 60
  - CW codes 209
  - valid values for observations 144

## **G**

- general info tab
  - request template edit 66
- geocoding service (Server) 195
- geodatabase (gdb) 3, 155, 162, 163, 170, 172, 178, 197, 198
- geographic area 53
  - request map layers 63
- geolocate address 233
- geometric network
  - isolation trace 171

- geometry
  - assign GIS rights 51
- GIS
  - fields on requests 63
  - Server info 195
- GIS layers
  - create WO on 156
  - isolation trace 171
  - setup 155
- GIS rights for Anywhere/Server 51
- glossary 311
- green text on data sheet 253
- group
  - domain 51
  - storeroom 184
- group rights tab 185
- group tamplate security 146
- groups tab
  - CU material groups 242
  - Storeroom groups 242

## **H**

- header row in import file 153
  - customer accounts 237
  - employees 43
  - street names 239
- hidden columns
  - filename (load tab of codes) 212
  - locating 17
- hide label 267

- hierarchy
  - build 14
  - contractors 105
  - equipment 111
  - Server contracts 191
- holidays tab 230
- host type 195
- hours
  - contractor 105
  - runtime 172
  - WO labor 78
- I**
- I/I 231
- image
  - CW asset forms 159
  - default image directory 159
  - employee 31
  - equipment 111
- import
  - codes 212
  - customer accounts 237
  - data types 11
  - employee file 43
  - from data sheet 253
  - other system codes 246
  - street names 239
  - WO template classes 153
- import customer accounts tab 237
- import street names tab 239
- import tab 212
- inactivate
  - employee 31
  - task 132
- inactive
  - employee search 44
  - information 17
- inflow/infiltration 231
- inspection
  - field mapping 170
  - observations 144
  - predefined CW 167
  - tables for employee permissions 146
- instructions 87
  - add to WO template 87
  - custom inspections 140
  - request templates 60
- insurance contractors 105
- interval 172
- isolation trace 171
- issue permission in Storeroom 185
- italic field label 267
- item in tree 14
- J**
- job
  - rates 215
- job codes 31, 68, 78, 215
- K**
- keywords 7, 51

- Cityworks data template 256
- contractors 105
- employee groups 51
- equipment 111
- tasks 132

**L**

- label
  - customize 267
  - response on WO task 132
- labor 78, 91, 105, 122, 123, 214, 215, 217
- labor tab
  - materials 78
- layer
  - map 233
  - parcel in isolation trace 171
  - Server map 195
- layout
  - request 267
- leak categories 231
- leak category 231
- line item cost (Server permission) 146
- linear (Q/A model) 55, 137, 140, 217
- linear Q/A model 137
- link
  - answers to questions 60
  - asset group to CW 156
  - code to another system 246
  - contract to WO/inspection 191
  - custom field names 99
  - custom print templates to request/WO 284
  - inspections to asset types 167
  - map layer to request 63
  - map layers to fields 233
  - rule set values to WO templates 153
  - Server inspections to WO template 97
  - tasks to WO template 75
  - WO templates to rule set 152
- list
  - order 7
  - reload item from 6
- load
  - button 11
  - customer accounts 237
  - CW table 252
  - employees 43
  - gdb values on inspections 170
  - other system codes 246
  - street names 239
  - tab 153
- location
  - cancelled information 17
  - storing custom print templates 282
- login
  - assign database administrators 19
  - employee 31
  - encrypt 29
  - no screen for CW data template 264
  - Storeroom domain administrator 183

- tool 3
- view 3
- loop questions 60
- M**
- macro
  - manager 243
  - security in CW data template 264
- magnifying glass button 25
- maintain history 17
- map
  - employee field layer 60
  - layers/fields 233
  - printing options 88
  - request layers 53
  - Server 195
- material
  - domain 20
  - groups 242
  - on work order 115
- materials 81, 83, 91, 105, 115, 149, 183, 216, 217, 249
- materials tab
  - CU materials tab 81
  - work order template 81
- maximize
  - calendar 8
  - Designer window 4
- menu
  - CW data template 251
  - Designer 4
- milestone in asset reading 172
- Miner & Miner Designer 115
  - activity 78
  - material groups 242
  - task 132
- minimize Designer 4
- miscellaneous functions 207
- mobile assets tab 156
- model field
  - equipment 111
- modify
  - asset groups 156
  - labels 267
  - permissions for employee groups 146
  - question on custom inspection 139
  - question order 60
- multiple
  - asset reading actions 173
  - attachment file paths 163
  - selections 7
  - WOs to request (Server) 65
- must use Designer 256
- N**
- NASSCO codes 213
- navigation tree 5
- network location
  - asset image 159
  - to update print templates 282
- new

- records in CW data template 253
- trunk 14
- no login screen 264
- not null fields 256
- notify M M checkbox 132
- null fields 256
- number
  - sorting 7
- numeric
  - custom fields 99
  - fields 256
- O**
- objects 158, 170
  - asset reading 176
  - update gdb when close WO 198
- observations
  - answers 140
  - configure on Server panel 142
  - custom inspections 135
  - populate on predefined inspections 144
  - questions 139
  - TV inspections 209
- observations tab 139
- open
  - folder 19
  - function 5
  - storeroom codes 25
- others
  - codes 291
  - functions 207
- overhead (contractors) 105
- P**
- PACP codes 213
- pane resizing 7
- password 28, 29
  - encrypted 28
  - prompt when closing CW data template 266
  - real 29
- paste cell values 261
- percent on cost codes 40
- permissions
  - custom inspections 143
  - CWWebUser 188
  - request templates 63
  - storeroom transactions 185
  - templates 146
- permit 134
- populate
  - CW codes 209
  - employee dropdown lists 149
  - field value 8
- predefined
  - inspection codes 295
  - instructions 87
  - materials 81
  - request comments 145
- preferences 217
  - ArcGIS 155

- employee cost codes 214
- employee job codes 215
- print templates network location 282
- use CCTV codes 213
- use dynamic cost codes 40
- preliminary setup 1
- prerequisites to create database 1
- print
  - asset inspection definitions 167
  - employee relates 149
  - field mappings for inspections 170
  - gdb sync 178
  - inactive employee search 44
  - queue 88
  - template security settings 146
- print template 88, 163, 217, 243, 274, 281, 287
- printable fields on CW asset forms 163
- printing tab 88
- priority
  - default values 291
  - Server AMS custom inspection 137
  - update request by question 60
- privileges
  - custom inspections 143
  - CWWebUser 188
  - request templates 63
  - storeroom transactions 185
  - templates 146
  - work orders 143

## Q

### Q/A

- answer on custom inspections 140
- model of custom inspection 137
- requests 60

Q/A model 55, 137, 140, 217

### quantity

- I/I smoke test 231
- material group 242
- material search minimum 128
- required for assembly 242
- Server contract 191
- units of measure code 183

### questions

- custom inspection 137
- requests 60

## R

### rate types

- contractors 105

readings tab 177

receive permission in Storeroom 185

record employee skills 38

record lock 245

red text (data template) 256

### refresh

- button 6

- list 7

- print templates last update 282

related objects 156

relationship WO to request 65

relationships tab 162

request

answers 60

customize layout 267

other system codes 246

security 63

tables for employee permissions 146

required 31, 99, 142

ACCTNUM field 237

code types 291

custom fields 99

reset all controls to default checkbox 267

resize 7

Designer window 4

response field on tasks 132

restore

asset form defaults 163

customize layout defaults 267

tree 5

results tab 140

reverse tab 8

rights

custom inspections 143

CWWebUser 188

request templates 63

storeroom groups 185

storeroom transactions 185

to access templates 146

work orders 89

rule fields 152

rule sets tab 153

## **S**

save

button 6

inactive employee search 44

save to file

gdb sync 178

material stock search 128

scores 209

SDE feature class name 233

search

inactive employees 44

print templates 282

tree item 14

search by field

labor 78

material 242

material groups 242

stock on hand 128

task 75

search stock on hand tab 128

security

domain groups 51

employee group security 146

request templates 63

Server map 195

storeroom groups 185

- security tab
  - custom inspections 143
  - WO templates 89
- Server
  - configuration 190
  - contracts 191
  - custom inspections 97
  - custom rating method 137
  - equipment 111
  - GIS info 195
  - line item cost permission 146
  - panel configuration on custom inspection 142
  - setup functions 188
- Server panel configuration tab 142
- show tables owned by SDE 197, 198
- smoke testing 231
- sorting columns 7
- source (permits) 134
- SQL query 178, 249, 255
- SQL statement (event layers) 46
- status 17, 178, 217
- stock on hand 128
- Storeroom 20, 25, 149, 183, 184, 217
- storeroom domain groups 184
- storeroom groups 184
- street names 239
- submit to
  - based on request layer 60
  - define map layers 233
  - employee email 31
  - permission to change on WO 143
  - print queue (WO) 88
  - replace inactive employee 44
  - request template 55
  - task 132
  - update request templates 66
  - within domain only 20
- superuser 2

**T**

- tabbing sequence 8
- tasks 13, 17, 75, 131, 132, 149, 217
- template security 146
- templates tab (custom inspections) 137
- transfer permission in Storeroom 185
- tree 5, 13, 54, 105, 111, 115, 131

**U**

- unit accomplished description 68
- units of measure 208
- units required 81, 84, 125
- use mobile assets tracking system 156
- utility line marking 27

**V**

- varchar 99, 216, 256
- version information 3
- viewable in Server 111

**W**

- warranty 111
- water isolation trace 171

wildcard search

materials 128

WO templates tab 65

work order 65, 68, 99, 145, 146, 149, 172, 198,  
217

work order layout manager 271

work order template classes 151