Lucity Imports and CCTV

Lucity Import Tools

In this workbook, we will discuss the Lucity Import tool. It's used to import data into most Lucity modules from either an ASCII file or ODBC compliant database. Note that this tool (LucityImport.exe) replaces the previous EFImport.exe and PTImport.exe. It uses all of the same database tables and contains all of the same functionality as the previous tools.

In addition, we'll discuss the Sewer TV Import program, used to import external TV observation data from outside vendors and integrate it with your *Sewer* inventory and inspection modules. We'll also go over the existing *Sewer* and *Storm* import programs used to import data from scratch or by using a pre-defined import.

Table of Contents

Lucity General Import

The Lucity Import tool allows clients to import data into the various *Lucity* modules. This is used to import data from a variety of sources, including fueling systems, Scada systems, and other data sources that contain meter readings for inventory items. You can import data from an ASCII file or an ODBC compliant database. To use this tool, you are required to map data from the import file/database to the appropriate fields in the Lucity modules.

While this import tool performs some calculations and validations, the main purpose of this tool is to allow data to be imported in bulk. Therefore, this tool does not perform all of the functionality that may be included when entering data via the Lucity front end. It may be necessary to run additional tools to perform all of the calculations and updates for a particular module.
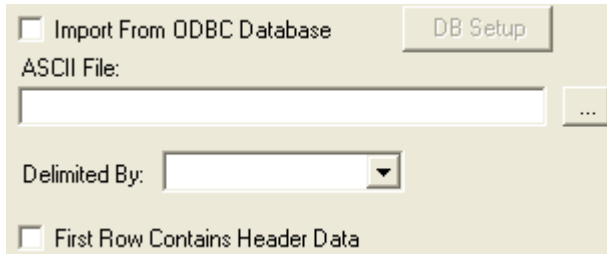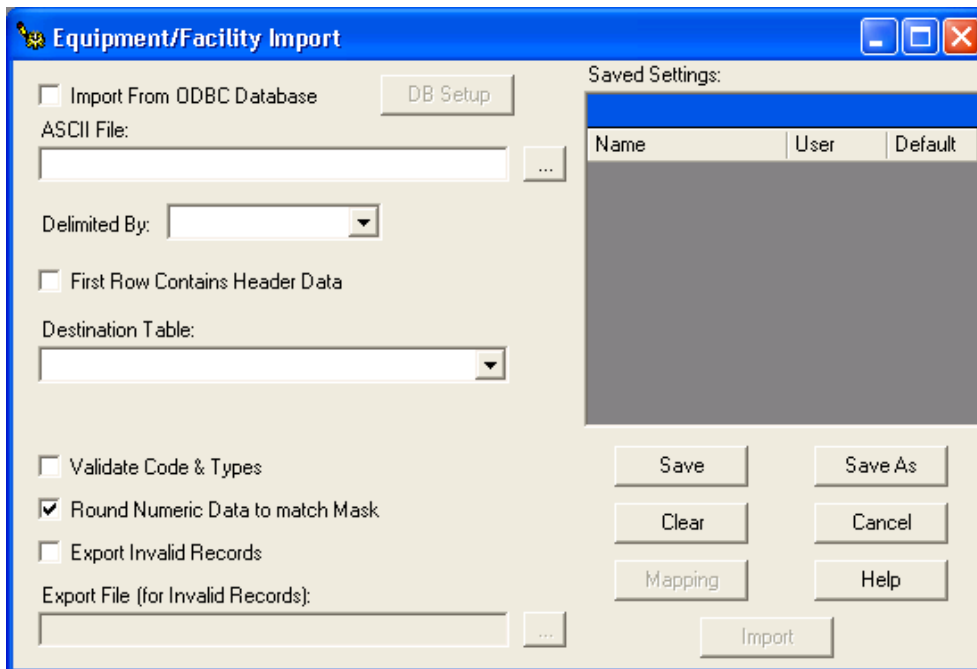

A sample Import tool appears above. This example comes from the *Lucity Equipment*. The name of the import tool displayed at the top of the screen will vary by module (i.e. Equipment/Facility Import, Storm Import, Sewer Import, etc.). While some of the fields on the screen are only present for certain tools, the overall functionality of all the Lucity Import tools is the same. Over the next few pages, we'll describe in detail how these tools are used.

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Import from ODBC Database or ASCII File

1. Access the import tool by selecting **Import/Export > General Import** from one of the menus in the Lucity Desktop application (i.e. Sewer, Storm, Water, etc.).

2. Determine if you are importing data from an ODBC Database or ASCII file. Depending on this determination, different fields will be enabled.

1. If you are importing from an ASCII File, specify the path to the file containing the data to be imported in the field provided. You can browse for the file to import by using the [...] button.

   Use the *Delimited By* field to indicate how the data in the ASCII file is delimited. You can either enter a character or series of characters into this field, or select one of the items from the dropdown list.
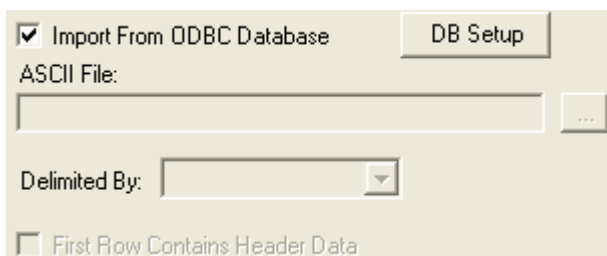

   Use the *First Row Contains Header Data* checkbox to indicate if there is column header data in the ASCII file. By checking this box, the first row will not be imported as a valid record; however, it will be used in the mapping screen to help with column mapping.
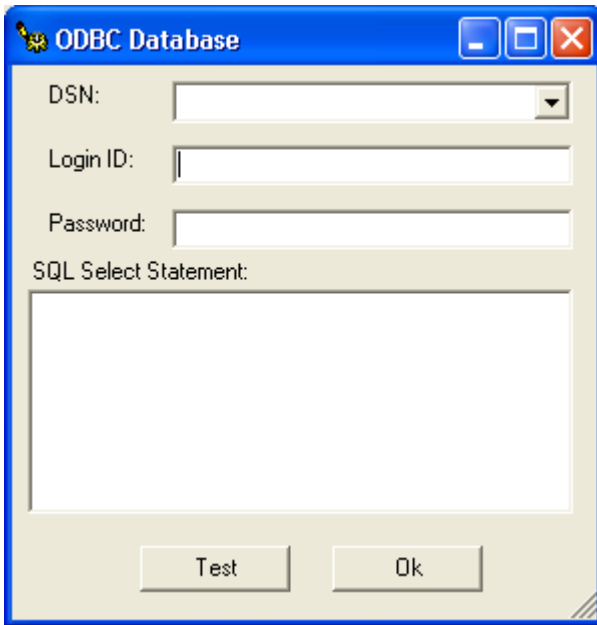
   Skip ahead to step 6.

2. If you are importing from an ODBC database, mark the *Import from ODBC Database* checkbox. The ASCII File fields discussed above will be disabled and the DB Setup button will be enabled.

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3. If you are importing from an ODBC database, click the *DB Setup* button. The following window will appear:

In the *DSN* field, indicate the DSN used to connect to the ODBC database. It is necessary that a DSN exist for the database from which you wish to import data.

The *Login ID* and *Password* fields are used to connect to the database (if required).

The large text box allows you to indicate the SQL statement used to pull the data out of the ODBC database. You must include the full SQL statement such as "SELECT * FROM TABLE1" where TABLE1 is the name of the table containing the data. Note: The import tool will try to import all records selected by the SQL Statement.

Click the *Test* button to verify your connection information and SQL statement. This helps ensure that the program will be able to connect to the database and process the SQL statement.

Click *OK* to return to the main import screen.

4. In the *Destination Table* field, use the dropdown list to select the table into which you are importing data. Note that the available tables vary by module.
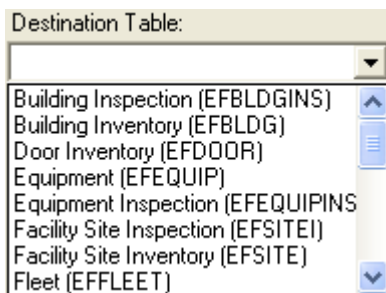
5. The following two checkboxes are only available in specific Import programs. You may not see them on your screen.

   Look Up Fluid Cost Based on Code – This checkbox only appears in the Equipment/Facility Import tool and is only enabled if Fuelings (EFFUEL) is selected as the Destination Table. By checking this field, the tool will lookup the Fuel cost in the *Work Flow Setup*, *Fluid* module and use that unit cost if a unit cost is not specified in the import data.

   Look Up Tree Information from Tree Code Setup – This checkbox only appears in the Park/Tree Import tool and is only enabled if Tree Inventory (TREE) is selected as the Destination Table. By checking this field, the tool will lookup corresponding data from the *Tree Code Setup* module (Tree Code, Common Name, Genus, Species, and Cultivar) and populate this data if it is not specified in the import data.

6. Mark the *Validate Code & Types* checkbox if you would like to perform validation on the code/type fields. If marked, the tool will identify records as invalid if both the code and type fields do not match a value specified in *Lucity*.

   The Fuel Code and Type fields in the Equipment/Facility Import are always validated regardless of the status of this checkbox.

7. Mark the *Round Numeric Data to Match Mask* checkbox if you would like the import program to round numeric data to match the field masks in *Lucity*. If this box is unchecked and the data has a higher precision than what *Lucity* allows, the record will be marked as invalid.

8. Mark the *Export Invalid Records* checkbox if you would like an export file to be created showing any records that were nontransferable during the import. This will be an ASCII, tab delimited file.

   The *Export File (for Invalid Records)* field will be enabled when the *Export Invalid Records* checkbox is marked. This field allows you to specify the location where you would like the export file to be created and the file name.
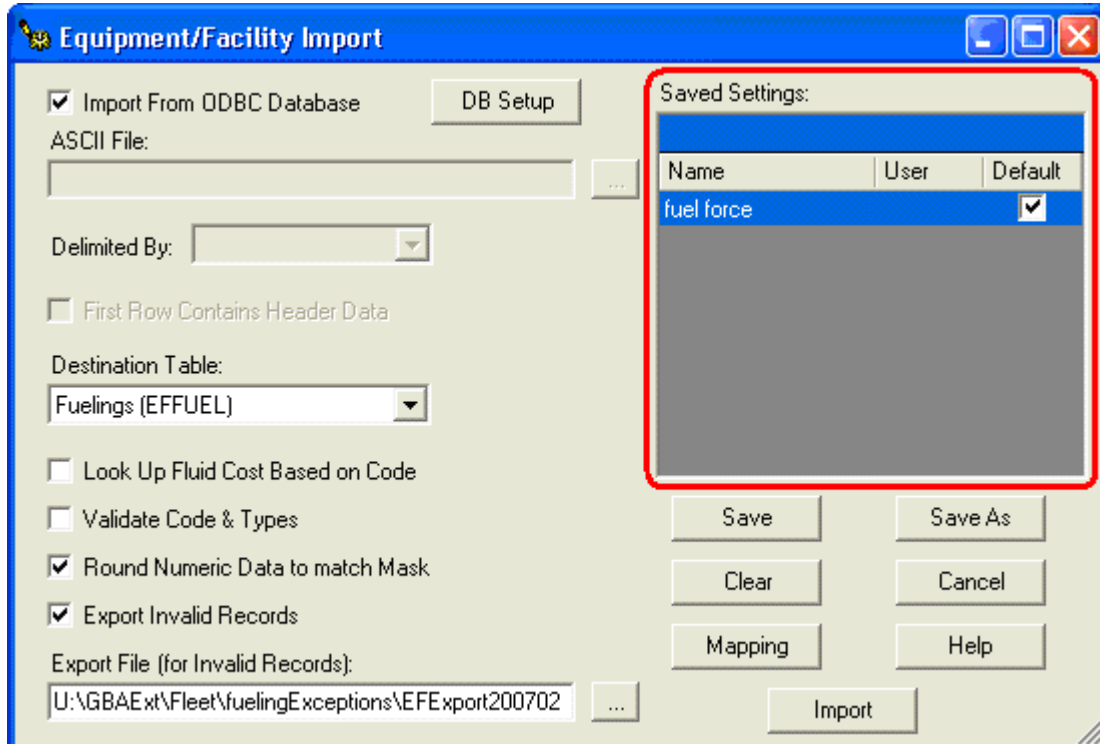

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Saved Settings

The *Saved Settings* grid lists any saved settings defined by a user. By clicking on a setting, the saved information will be loaded and shown in the various fields on screen. Any field mappings will also be loaded at that time.

1. Once a setting is loaded, you can modify any of the settings or field mappings. If you click the *Save* button, the currently highlighted Saved Setting will be overwritten with the modifications.

2. If you click *Save As*, a new Saved Setting will be created based on the name that you specify.

3. If you make modifications and do not save your changes, the altered settings will be used for the current import only. You will not have access to these changes later.

4. Each user can have one Default Saved Setting. This means that when the module is opened, the Default settings are automatically loaded. You can change the Default by clicking on the checkbox in the *Saved Settings* grid, or by right clicking on the highlighted setting and selecting *Toggle Default*.

5. You also have the option of deleting or renaming a Saved Setting.
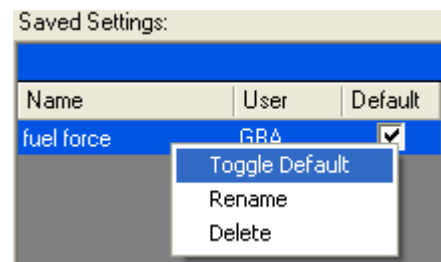
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Field Mappings

When you click the *Mapping* button on the Lucity Import tool, a form similar to the following will be displayed. This form allows you to specify the mapping of the data from the import file/database to the appropriate fields in *Lucity*.

1. The Source File grid displays the first row of data in the import file so that you can map your data. If the "First Row Contains Header Data" checkbox was marked, the Field Name column indicates the appropriate column names. If this checkbox was not marked, the Field Name includes values such as "A1", "A2", etc. to identify the columns. The Value(A) column includes the values for the first row to be imported

2. The *Destination File* grid displays the fields that the import data can be mapped to:

    Name – This column indicates the field name in the appropriate *Lucity* table. The fields highlighted in yellow indicate fields that are required and must have data mapped to them.

    Caption – This column indicates the associated Caption that a user would see when in the related *Lucity* modules.

    Mask – This column indicates the field's mask (25x means that a field supports 25 characters, nnn means that a field displays only the first 3 numeric digits, etc.).

    Field Type – This column indicates the data type of the field (Text, Date/Time, Long Integer, Double, Short Integer, or Boolean).

    Formula/Value – This column indicates the data to be mapped to the associated field in *Lucity*.

3. In order to map the data to the appropriate field in *Lucity*, the user must populate the Formula/Value column using one of the following four methods:

Indicate a specific value that will be inserted for each record imported. For example, you can include a specific date for all of your records by entering "1/1/2010" in the Date field.

Map data from the Source File grid. This is accomplished by typing "=A" and then the appropriate column number from the # field in the Source file grid. For example, you can map a date for the records by entering "=A8" in the Date field. This way, the date value for each record is inserted into the Date field.

Use a formula/equation that your database platform can recognize. This is accomplished by typing "+" and then the formula with the appropriate data mapping. For example, if your import data contains data similar to "00066" but the data needs to be imported into a Text field as "66", this could be accomplished by entering "+CINT(=A4)". CINT is specific to Access (Jet), so for Oracle you would use "+CAST(=A4 AS Number(5,0))" and for SQL Server you would use "+CAST(=A4 AS INT)".

4. To test your equations, formulas, and mappings, enter them into the *Test Equation* field at the top of the screen and click the *Test* button. The value entered should be identical to a value you would indicate in the Destination Table grid for the Formula/Value column.

Please note that when testing data that will be mapped to a date field, the test may be inaccurate as date data goes through several formatting checks during the import.

5. Click the *Close* button to return to the Lucity Import screen. If you wish to save any modifications to the Field Mapping form, either press *Save* or *Save As* when you have returned to the Lucity Import screen. If you do not save your changes, they will be used for the current import but will be lost for future imports.

Import

After clicking the *Import* button on the Lucity Import form, the tool will begin evaluating the data to import. If the code determines that any records cannot be imported, an Invalid Records form similar to the one below will be displayed.

This form displays only those records that the program has determined cannot be imported. Some common reasons why the data could not be imported include:

Invalid code/type combinations

Data that is not the correct data type (i.e. inserting Text into a Numeric field)

Missing required information

A record that is not unique

3. After reviewing the reasons why a record may be invalid, you can directly modify the data in the grid. Then, if you want to try to import that data along with the rest of the data, click the *Retry* button. The import tool will attempt to process all of the records again, this time with the new data.

If the changes are successful, the import tool will continue to import all data.

If for some reason the changes do not correct the record, or if there is another record that is still invalid, the dialog will be displayed again.

4. After reviewing the reasons why a record may be invalid, you may decide to import the valid records only. You can do so by clicking the *Continue* button.

Beware: By pressing *Continue*, any changes you made to the current list of invalid records will be lost. If you previously modified a record, clicked *Retry*, and that record is no longer displayed, it will be included in the records to be imported.

Any records that are still invalid will be exported into an ASCII tab delimited file if you selected the "Export Invalid Records" checkbox on the Import form.

5. After reviewing the reasons why a record may be invalid, you may decide not to import any records at this time. Click *Exit* and the import tool will prompt you to create an export of the invalid records and then immediately exit the program.

Sewer TV Import Program

The *Sewer Data Import* program allows you to import external TV observation data from outside vendors and integrate it with your *Sewer* inventory and inspection modules. There are several steps involved in the data import process. First, your data is transcribed into the *Lucity* software through the code setup process. Then you can import a set of TV observations and validate them. Once validated, observations are transferred into *TV Inspection* records.

Basic TV Import Process

We've described the basic TV Import process below; however, keep in mind that the steps taken and data needed for the import process varies among the vendors. For additional information on the import process for individual vendors, please consult the Lucity help guide.

1. **Code Setup** – First, your data must be transcribed into the *Lucity* software through a code setup process. This process varies from vendor to vendor. This requires that the LUCITYTVMAP.mdb be configured to match your vendors CCTV defect codes to the appropriate defect description in *Lucity*. Typically this service is provided during the initial purchase of the import program. Although it varies slightly from vendor to vendor, the code setup is performed in a table called "LUCITYTVMAP_" + vendor name (i.e. LUCITYTVMAP_FLEXIDATA). These tables contain the vendors defect ID (either a numeric or alphanumeric code from the vendors defect table), the corresponding location description (to be populated in the TO_NOT1_TY field in Lucity), defect description (to be populated in the TO_NOT2_TY field in Lucity), and the defect rating (to be populated in the TO_RATING field in Lucity). Here's a sample:

In my vendor database I have a defect code called RML, which translates into "Roots Mass at Lateral". To interface this defect with Lucity I have two options:

I can go to the LUCITYTVMAP.mdb and add a new defect to the table like this:

LUCITYTVMAP_Vendor				
FIELDNAME	USERCODE	LOCATION	DESCRIPTION	RATING
TO_NOT1_TY	RMJ	NA	Roots Mass at Joint	5

I can add a variation to the defect like this:

LUCITYTVMAP_Vendor				
FIELDNAME	USERCODE	LOCATION	DESCRIPTION	RATING
TO_NOT1_TY	RMJ	Joint	Roots	5

This sample allows me to define the location and severity of the defect as separate fields in the Lucity database.

There is no right or wrong way of setting this up, it's a matter of preference and how you want to define your defects and scores.

2. **Field Mapping** - In addition to defect mapping, some vendor import support field mapping. This allows you to map the vendors attribute field to the corresponding field in Lucity. The field mapping is also stored in the LUCITYTVMAP database in a table called "FIELDMAP_" + vendor name (i.e. FIELDMAP_WINCAN). The field mapping is only supported for the following Lucity tables: SWNET (Pipe), SWNETMH (Manhole), and SWTVLINE (TV Inspection). The field mapping for the observation table (SWTVOBSR) is hardcoded to each vendors defect table.

3. **External TV Import** - Once the code setup and field mapping is complete, you can import a set of TV observations. This process imports your data into a temporary file and then automatically launches the Validate and Transfer program.

4. **Validate and Transfer** - Now the data you imported must be validated and transferred to the primary database. This is an automatic process that checks your data for duplicate records (within the validation and the master database). It also looks for key information to populate required fields. By doing this validation and transfer, you are creating the Validate.mdb file that will be transferred to the main database.

5. **Recalc All** - You may want to run the Recalc All function after importing new data. This will update all of the auto-calculations in the system taking into account any new data imported.

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Outside Vendors Supported by Lucity

The following is a list of outside TV inspection vendors that are compatible with *Lucity*:

- Aqua Zoom/Canalis
- Aries
- BlackHawk
- Cobra
- Cues
- EasyCan
- Flexidata

- Houston Harris
- NAASCO MACP
- NAASCO PACP
- PEER SMP
- PipeTech
- SubCam
- WinCan

PACP Importing

When importing PACP data we recommend using the NAASCO PACP import option. This import requires that you export your vendor data to the NAASCO PACP Exchange Database format. You need to check with your vendor in determining if their software supports this format (if they are PACO certified they will have this capability, however they may sell this as an "add-on" feature to their software).

In version 6.75 Lucity started supporting an additional CCTV module specific to PACP data. When importing from the exchange database the client can import their data to the standard CCTV module or to the PACP module. The PACP module replicates the Exchange database such that there is a one-to-one field match. This import is hard-coded and follows the NAASCO PACP protocols, including pipe and defect scoring. The PACP Exchange database can also be imported to the standard CCTV module in Lucity. This option allows the user to participate in the field mapping described in item 2 above.

Sewer and Storm Import

The *Storm* and *Sewer* Import programs allow you to import data from outside sources. There are two ways to import: From scratch or by using a pre-defined import. When you import data, you create a temporary file ("Validate.mdb") to store your data until it is validated and transferred into a permanent database.

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Importing from Scratch

1. From the Lucity main menu, open Storm>>Import/Export>>Import or Sewer>>Import/Export>>Import.

    The import tool looks similar for both modules.
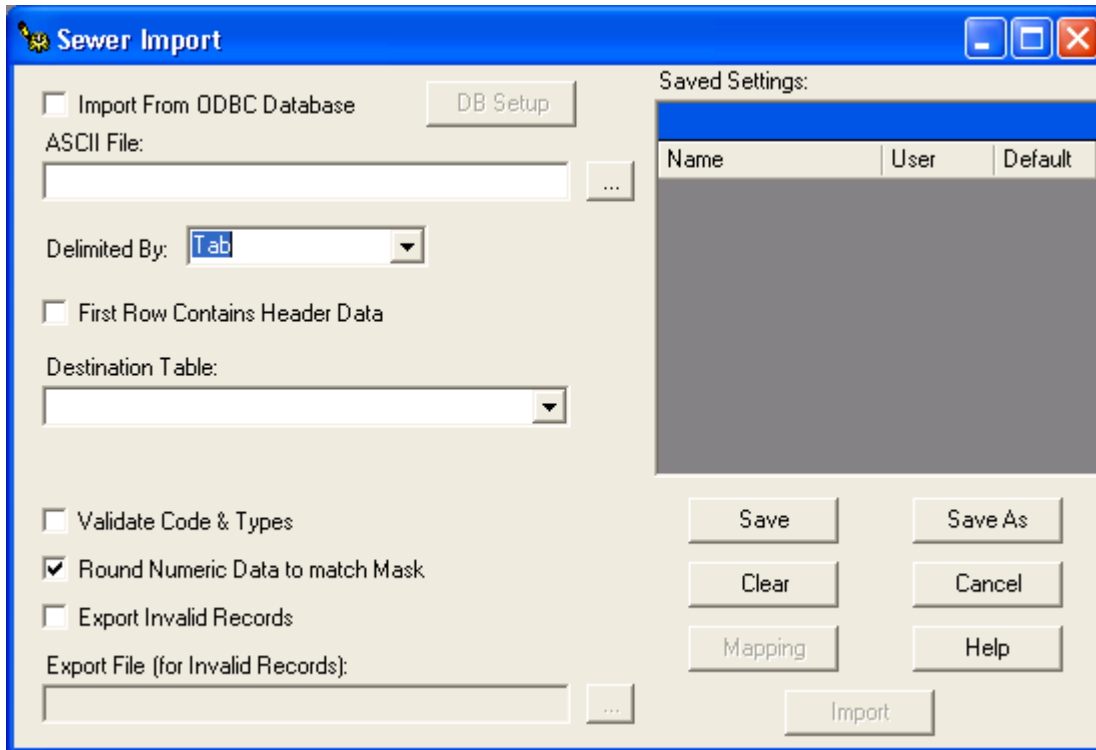
2. Click [...] next to the Source ASCII field and select a source file.

    Click *Open*. The selected file will be displayed in the Source ASCII field.

    Click [icon] to preview the file.

3. Select a delimiter from the dropdown menu.

4. Click [...] next to the Destination folder field to browse to the folder path.

5. Click on a selection in the Database Tables grid. This tells the program which table to put the data in when importing.

    Note: Click "Save As" to make this a pre-defined import. It will then be added to the grid in the upper-right corner of the window.

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6. Click *Go* to continue the import process. You'll see the screen below:
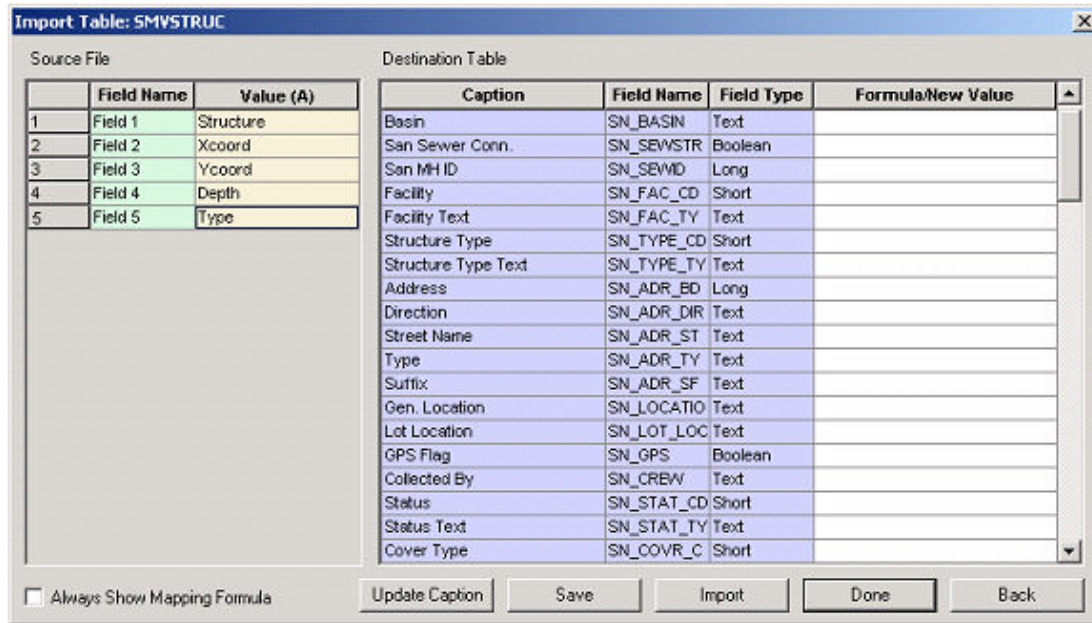
When importing data from an outside source to an existing database, you must configure the data. The Import Table allows you to match up fields from the Source Files with fields in the Destination Table and enter a mapping formula in the Formula/New Value column. This formula ensures that data will be transferred into the correct fields.
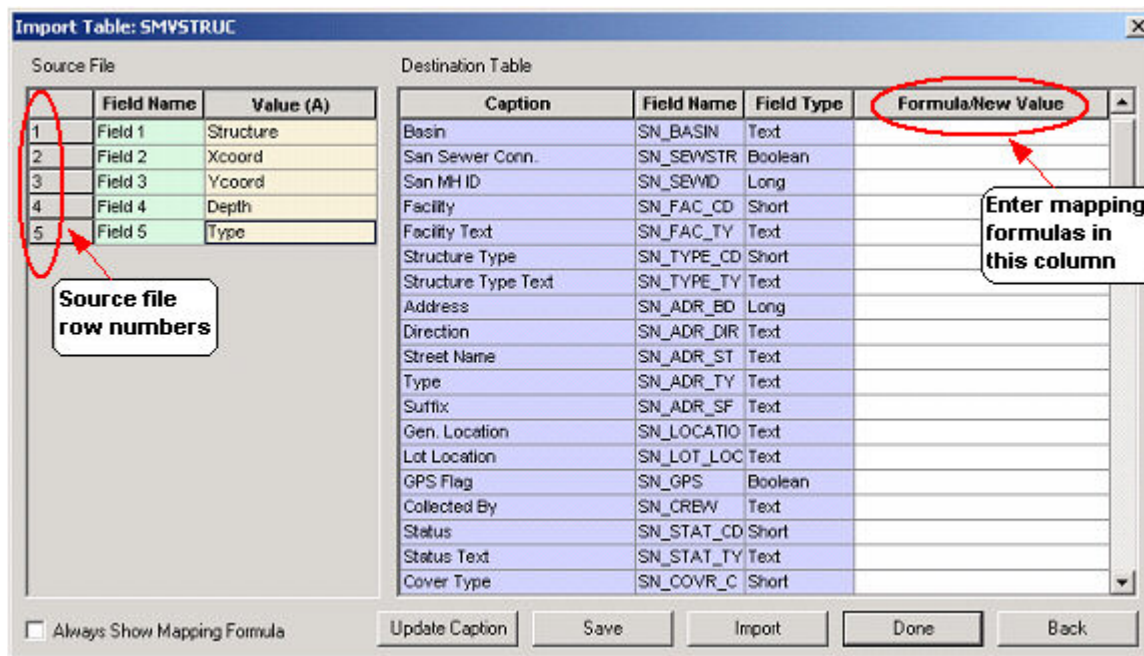
Assigning Formulated Values

To assign mapping formulas to the appropriate fields, complete the following steps:

1. Match up the source file field values (in the Value A column) with their corresponding fields (in the Caption column) in the Destination Table.
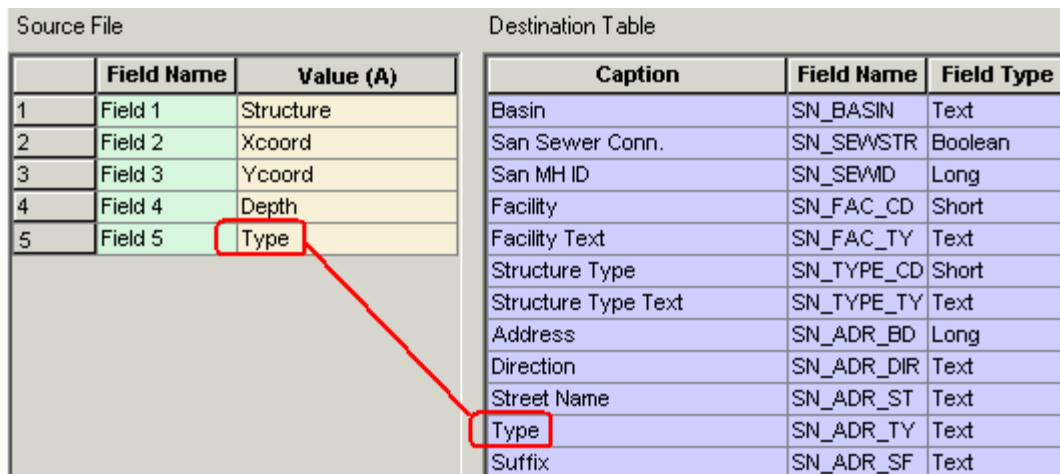
2. Enter the following mapping formula in the Formula/New Value Column next to the corresponding field: **=A(the source file row number)**.
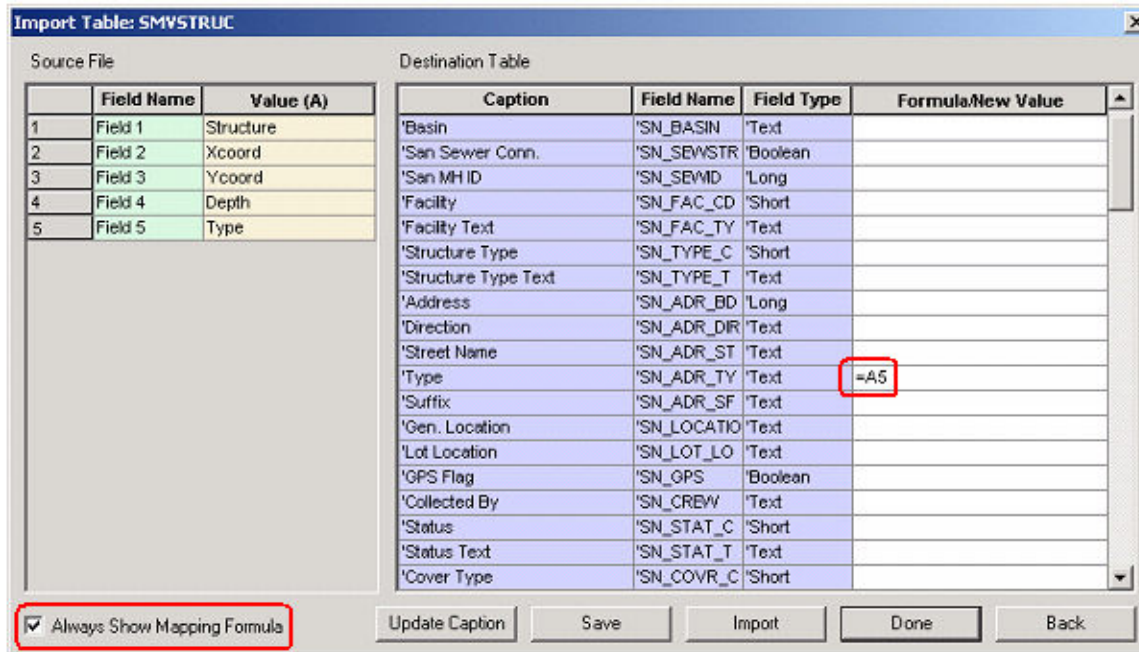

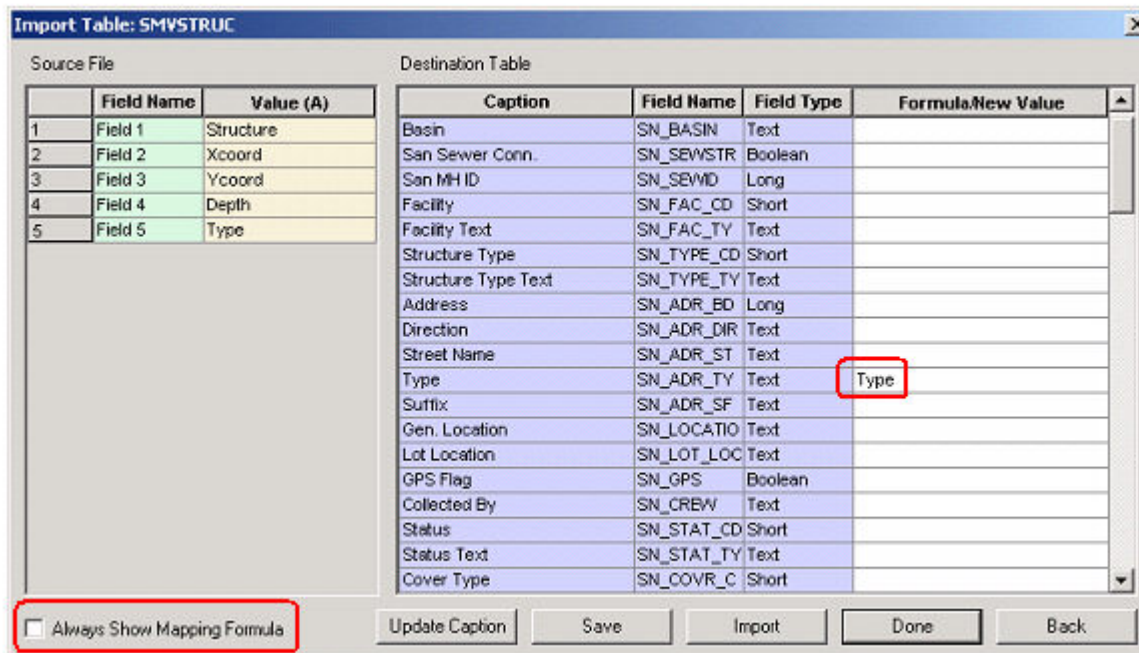Upon entering the formulas, your screen should resemble the following:

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3. The Always Show Mapping Formula checkbox displays the formulas from the source file in the Formula/New Value column.

When the checkbox is unmarked, the actual data will appear in those cells; however, upon selecting a cell, the formula will reappear.

4. Use the buttons below the table when you have entered the mapping formulas.

Update Caption – Updates captions for the Destination Table. Use this if any of the captions in the Inventory or Inspection modules are changed and a pre-defined import was selected from the Database Import screen.

Save – Saves all the import formulas you created. The next time you import similar data, you will not need to reassign the formulated values. You can save over an existing import or enter a new name.
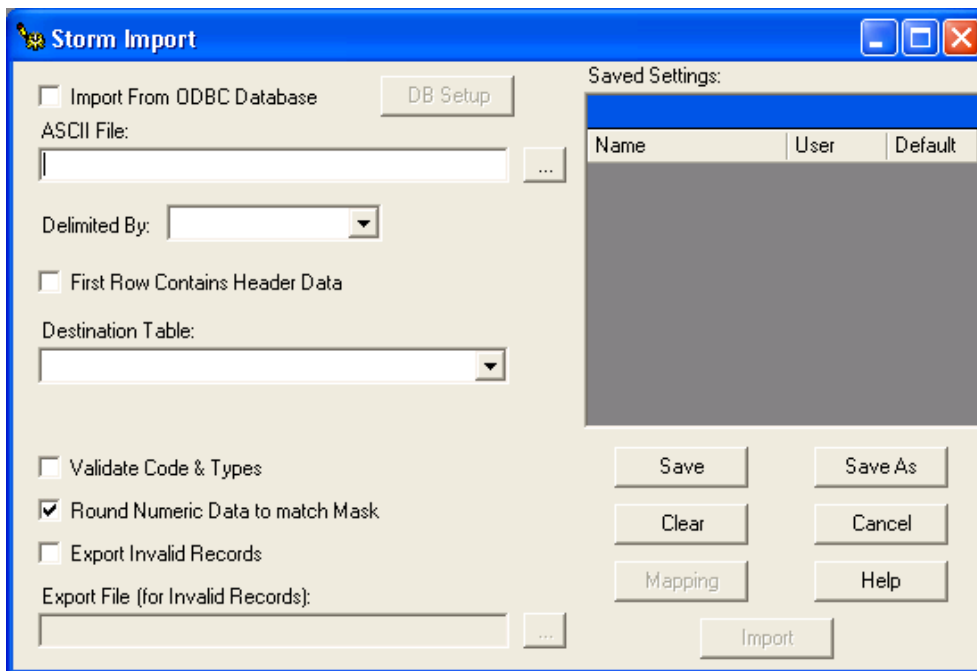
Import – Imports new data and saves it as a database file called Validate.mdb.

Done – Takes you back to the Lucity Import window.

Back – Tells the program you are finished assigning formulated values and returns you to the Database Import window.

Using Pre-Defined Imports

1. Open Storm>>Import/Export>>Import or Sewer>>Import/Export>>Import

2. Select an import from the list in the upper right corner of the window.

Note: When using a pre-defined import, you will not need to select a database table; the pre-defined import will automatically be associated with one.

3. Click [...] next to the Source ASCII field to select a source file.

- Click *Open*. The file will then appear in the Source ASCII field.

- Click [⊞] to preview the file.

4. Select a delimiter from the drop-down menu.

5. Click [...] next the Destination folder field and select a destination folder from the pop-up window.

6. Click *GO* to begin the import.