

Sewer Rehab Module

City of Fontana

Public Works Department

Objectives

- Program Level Costs
- Program Level Information
- Project Level Information

Presentation

- Pipe Rehab Setup
- Sewer Rehab Model
- Rehab Projects

PIPE REHAB SETUP

Pipe Rehab Setup

The Sewer Rehab program contains several setup modules used. These modules will help determine which pipes are selected for rehabilitation or replacement, which work tasks need to be performed, and the cost to rehabilitate the sewer network. Follow the links below for additional information.

Rehab Work Tasks and Costs

Rehab Work Tasks and Costs

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can create records for each rehab action to be taken. You'll use this module to include the pipe rehab work tasks and their costs for various pipe classifications. You can then link these tasks to the **Work Flow Setup** for use in the **Work Orders** system. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

Module Toolbar



For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

To access the **Rehab Work Tasks and Costs** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Rehab Work Tasks and Costs** and the following window will appear.

Pipe Rehab Work Tasks - No Filter

Task: 101 Clean, TV Inspect Line

W/O Task Code: 101 % I/I Removed: 0

Rehab Units: 1 Entire Pipe Min Rehab Length:

Rehab Class: 3 Line Cleaning Pt Repair Min Dist:

Default Task Cost - Up to 10 feet Deep

	Easy	Difficult
Unpaved	2.00	2.00
Paved	2.00	2.00
Heavy Traffic		

Cost per each VF > 10 ft:

Cost per Pipe Diameter

Dia	Unpaved-Easy	Paved-Easy	Unpaved-Diff	Paved-Diff	Heavy-Easy	Heavy-Diff	Cost>10Ft
7							
10	2.25	2.25	2.25	2.25			

Record 1 of 9 View Mode Ready...

PWD Pipe Rehab Work Tasks

Pipe Rehab Work Tasks - No Filter

Task: 1 Point Repair 1 LF Dig Out

WO Task Code:

Rehab Units: 3 Each

Rehab Class: 1 Main Line Repair

% I/I Removed:

Min Rehab Length: 4

Pt Repair Min Dist: 10

Default Task Cost - Up to 10 feet Deep

	Easy	Difficult
Unpaved	13000.00	15600.00
Paved	13000.00	15600.00
Heavy Traffic	13000.00	15600.00

Cost per each VF > 10 ft: 1300.00

Cost per Pipe Diameter

Dia /	Unpaved-Easy	Paved-Easy	Heavy-Easy	Unpaved-Diff	Paved-Diff	Heavy-Diff	Cost>10Ft
8	13000.00	13000.00	13000.00	15600.00	15600.00	15600.00	1300.00
10	15000.00	15000.00	15000.00	18000.00	18000.00	18000.00	1500.00
12	17200.00	17200.00	17200.00	20640.00	20640.00	20640.00	1720.00
15	20000.00	20000.00	20000.00	24000.00	24000.00	24000.00	2000.00
18	21500.00	21500.00	21500.00	25800.00	25800.00	25800.00	2150.00
21	23000.00	23000.00	23000.00	27600.00	27600.00	27600.00	2300.00
24	26200.00	26200.00	26200.00	31440.00	31440.00	31440.00	2620.00
36	30000.00	30000.00	30000.00	36000.00	36000.00	36000.00	3000.00
42	34500.00	34500.00	34500.00	41400.00	41400.00	41400.00	3450.00

Record 1 of 4 View Mode Ready...

Default Task Cost

Default Task Cost

In the upper-right corner of the **Rehab Work Tasks and Costs** module you'll see seven Default Task Cost fields. These are pictured below:

Default Task Cost - Up to 10 feet Deep		
	Easy	Difficult
Unpaved	<input type="text" value="2.00"/>	<input type="text" value="2.00"/>
Paved	<input type="text" value="2.00"/>	<input type="text" value="2.00"/>
Heavy Traffic	<input type="text"/>	<input type="text"/>
Cost per each VF > 10 ft <input type="text"/>		

You'll use the top six fields to record the cost per foot to perform the rehabilitation work task in this record on each of six different pipe classifications listed below (for pipes up to 10 feet deep).

- Easy Access/Unpaved Pipes
- Difficult Access/Unpaved Pipes
- Easy Access/Paved Pipes
- Difficult Access/Paved Pipes
- Easy Access/Heavy Traffic Pipes
- Difficult Access/Heavy Traffic Pipes

Note: Pipes are assigned to these categories using the parameters established in the [Accessibility](#) and [Surface Types](#) setup modules.

You'll also see a Cost per each VF > 10 ft field. Use this field to record the cost per vertical foot to perform the rehabilitation work task in this record for pipes at a depth in excess of 10 feet. The model will use the pipe's average depth when calculating this cost.

PWD Default Task Cost

Default Task Cost - Up to 10 feet Deep		
	Easy	Difficult
Unpaved	13000.00	15600.00
Paved	13000.00	15600.00
Heavy Traffic	13000.00	15600.00
Cost per each VF > 10 ft		1300.00

Costs Per Pipe Diameter

Costs per Pipe Diameter

This grid in the **Rehab Work Tasks and Costs** module allows you to set up rehabilitation costs per pipe diameter. You can create as many Cost per Diameter records as needed. If a pipe meets the diameter criteria established below, these costs will be used instead of the initial [Default Task Cost](#) defined in the parent **Rehab Work Tasks and Costs** record.

1. Right-click in the grid and select **Add Record**. The following window will appear:

	Easy	Difficult
Unpaved	2.25	2.25
Paved	2.25	2.25
Heavy Traffic		

2. Enter the pipe diameter in inches in the field provided. This is required in order to save the record.
3. Record the cost per foot to perform the rehab task in this record on each of the following pipe classifications (for pipes up to 10 feet deep):
 - Easy Access/Unpaved Pipes
 - Difficult Access/Unpaved Pipes
 - Easy Access/Paved Pipes
 - Difficult Access/Paved Pipes
 - Easy Access/Heavy Traffic Pipes
 - Difficult Access/Heavy Traffic Pipes

Note: Pipes are assigned to these categories using the parameters established in the [Accessibility](#) and [Surface Types](#) setup modules.

4. For pipes at a depth greater than 10 feet, use the field provided to record the cost per vertical foot to perform the rehab task in this record. The model will use the pipe's average depth when calculating this cost.
5. Click to save the record.
6. Click to exit **Add Mode**.
7. Click to close the window.
8. You can then use the functions in the grid to **View**, **Edit**, and **Delete** records as needed.

PWD Diameter Cost

The screenshot shows a software dialog box titled "Diameter Costs" with a close button (X) in the top right corner. Below the title bar is a toolbar with icons for grid, copy, paste, delete, undo, redo, and print. The main area contains a "Diameter" input field with the value "10". Below this is a section titled "Costs - Up to 10 feet Deep" containing a table with three rows: "Unpaved", "Paved", and "Heavy Traffic". Each row has two columns: "Easy" and "Difficult", with values of 15000.00 and 18000.00 respectively. Below the table is a "Cost per each VF > 10 ft" input field with the value 1500.00. At the bottom, there are three buttons: "Record 2 of 10", "View Mode", and "Ready...".

	Easy	Difficult
Unpaved	15000.00	18000.00
Paved	15000.00	18000.00
Heavy Traffic	15000.00	18000.00

Cost per each VF > 10 ft: 1500.00

Record 2 of 10 View Mode Ready...

Default Rehab Work Tasks

Default Rehab Work Tasks

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can define selection criteria for each Rehab and Replacement Work Task included in the [Rehab Work Tasks and Costs](#) module. The model runs will then use these criteria to determine which pipes to select for rehabilitation and which rehab methods to use. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

Module Toolbar



For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

To access the **Default Rehab Work Tasks** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Default Rehab Work Tasks** and the following window will appear.

Pipe Default Rehab Work Tasks - No Filter

Rigid Pipe Easy Access Unpaved Cover Min Pipe Dia: Priority:
 Flexible Pipe Difficult Access Paved Cover Max Pipe Dia:
 Brittle Pipe Heavy Traffic Max Depth:
 Rehab Work Task:
 Replace Work Task: Analysis Type:

PACP - Work Tasks per Defect | TV Insp - Work Tasks per Defect

Defect	Defect Text	Struct 1	Struct 1 Rehab	Struct 2	Struct 2 Rehab	O&M 1
RMB	Roots Medium Barrel	2	Remove Roots, Clean, TV In...	2		3 Lin
CL	Crack Longitudinal	2	Mainline Point Repair			2 Ma
CC	Crack Circumferential	1	Mainline Point Repair			4 Inst

Record 1 of 3 View Mode Ready...

PWD Pipe Default Rehab Work Tasks

Pipe Default Rehab Work Tasks - No Filter

Rigid Pipe Easy Access Unpaved Cover Min Pipe Dia Priority
 Flexible Pipe Difficult Access Paved Cover Max Pipe Dia
 Brittle Pipe Heavy Traffic Max Depth

Rehab Work Task Complete Line Repair CIPP
 Replace Work Task Complete Line Repair Remove and Replace
 Analysis Type Structural and O&M

Defect /	Defect Text	Struct 1	Struct 1 Rehab	Struct 2	Struct 2 Rehab	O&M 1
B	Broken	1	Point Repair 1 LF Dig Out			
BSV	Broken Soil Visible	1	Point Repair 1 LF Dig Out			
BVV	Broken Void Visible	1	Point Repair 1 LF Dig Out			
D	Deformed	1	Point Repair 1 LF Dig Out			
FL	Fracture Longitudinal	1	Point Repair 1 LF Dig Out			
H	Hole	1	Point Repair 1 LF Dig Out			
HSV	Hole Soil Visible	1	Point Repair 1 LF Dig Out			
HVV	Hole Void Visible	1	Point Repair 1 LF Dig Out			
ISZ	Intruding Sealing Other	1	Point Repair 1 LF Dig Out			
JOL	Joint Offset Large	1	Point Repair 1 LF Dig Out			
JOM	Joint Offset Medium	1	Point Repair 1 LF Dig Out			
JSM	Joint Separated Medium	1	Point Repair 1 LF Dig Out			
LFBK	Lining Failure Buckled	1	Point Repair 1 LF Dig Out			
LFD	Lining Failure Detached	1	Point Repair 1 LF Dig Out			
LFDI	Lining Failure Delamination	1	Point Repair 1 LF Dig Out			

Record 1 of 2 View Mode Ready...

Default Rehab Work Tasks

Default Rehab Work Tasks

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can define selection criteria for each Rehab and Replacement Work Task included in the [Rehab Work Tasks and Costs](#) module. The model runs will then use these criteria to determine which pipes to select for rehabilitation and which rehab methods to use. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

Module Toolbar



For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

To access the **Default Rehab Work Tasks** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Default Rehab Work Tasks** and the following window will appear.

Pipe Default Rehab Work Tasks - No Filter

Rigid Pipe
 Easy Access
 Unpaved Cover
 Min Pipe Dia:
 Priority:

Flexible Pipe
 Difficult Access
 Paved Cover
 Max Pipe Dia:

Brittle Pipe
 Heavy Traffic
 Max Depth:

Rehab Work Task:
 Install Cured-In-Place Liner

Replace Work Task:
 Analysis Type:

PACP - Work Tasks per Defect
 TV Insp - Work Tasks per Defect

Defect	Defect Text	Struct 1	Struct 1 Rehab	Struct 2	Struct 2 Rehab	O&M 1
RMB	Roots Medium Barrel	2	Remove Roots, Clean, TV In...	2		3 Lin
CL	Crack Longitudinal	2	Mainline Point Repair			2 Ma
CC	Crack Circumferential	1	Mainline Point Repair			4 Inst

Record 1 of 3 View Mode Ready...

PWD Default Rehab Work Tasks

Pipe Default Rehab Work Tasks - No Filter

Rigid Pipe
 Easy Access
 Unpaved Cover
 Min Pipe Dia:
 Priority:

Flexible Pipe
 Difficult Access
 Paved Cover
 Max Pipe Dia:

Brittle Pipe
 Heavy Traffic
 Max Depth:

Rehab Work Task: Complete Line Repair CIPP

Replace Work Task: Complete Line Repair Remove and Replace
 Analysis Type: Structural and O&M

Defect /	Defect Text	Struct 1	Struct 1 Rehab	Struct 2	Struct 2 Rehab	O&M 1
B	Broken	1	Point Repair 1 LF Dig Out			
BSV	Broken Soil Visible	1	Point Repair 1 LF Dig Out			
BVV	Broken Void Visible	1	Point Repair 1 LF Dig Out			
D	Deformed	1	Point Repair 1 LF Dig Out			
FL	Fracture Longitudinal	1	Point Repair 1 LF Dig Out			
H	Hole	1	Point Repair 1 LF Dig Out			
HSV	Hole Soil Visible	1	Point Repair 1 LF Dig Out			
HVV	Hole Void Visible	1	Point Repair 1 LF Dig Out			
ISZ	Intruding Sealing Other	1	Point Repair 1 LF Dig Out			
JOL	Joint Offset Large	1	Point Repair 1 LF Dig Out			
JOM	Joint Offset Medium	1	Point Repair 1 LF Dig Out			
JSM	Joint Separated Medium	1	Point Repair 1 LF Dig Out			
LFBK	Lining Failure Buckled	1	Point Repair 1 LF Dig Out			
LFD	Lining Failure Detached	1	Point Repair 1 LF Dig Out			
LFDI	Lining Failure Delamination	1	Point Repair 1 LF Dig Out			

Record 1 of 2 View Mode Ready...

PACP Work Tasks per Defect Tab




PACP Work Tasks per Defect Tab

You'll use the PACP Work Tasks per Defect grid to add additional selection criteria to the record. These include which rehabilitation or replacement methods will be used when certain Defects are observed in a [PACP Pipe Inspection](#) record. The selection will be based on the defect's Structural rating or O&M rating. To add a Work Task per Defect record to the grid, complete the following steps:

1. Right-click in the grid and select **Add Record**. The following window will appear:

Defect			
Struct Rating 1		Struct Task 1	
Struct Rating 2		Struct Task 2	
O&M Rating 1		O&M Task 1	
O&M Rating 2		O&M Task 2	

Press F9 for pop-up selection Record 0 of 3 Add Mode Ready...

2. Click on the Defect button to select from all available sewer pipe defects (found in the [Inspection Setup](#) module). This is required in order to save the record.
3. Four Rating fields are provided. These allow you to enter the minimum observation ratings that a pipe needs to have in order to be selected for the corresponding rehabilitation or replacement work tasks. When the model is run, the system analyzes the pipe observation information to determine if the criteria established in this module are met. If so, then the Structural or O&M Tasks are selected based on the Ratings defined here.
 - Struct Rating 1 - The minimum structural observation rating required for the Struct Task 1 to be selected.
 - Struct Rating 2 - The minimum structural observation rating required for the Struct Task 2 to be selected.
 - O&M Rating 1 - The minimum O&M observation rating required for the O&M Task 1 to be selected.
 - O&M Rating 2 - The minimum O&M observation rating required for the O&M Task 2 to be selected.
4. For each defect you can choose two Structural Work Tasks and two O&M Work Tasks. These are the rehabilitation and replacement work tasks used by the model run when the identified defect is observed in a selected pipe. These pick lists come from the [Rehab Work Tasks and Costs](#) module.
 - Struct Task 1 - This structural replacement task will be selected if the minimum Struct Rating 1 is met.
 - Struct Task 2 - This structural rehabilitation task will be selected if the minimum Struct Rating 2 is met.
 - O&M Task 1 - This O&M replacement task will be selected if the minimum O&M Rating 1 is met.
 - O&M Task 2 - This O&M rehabilitation task will be selected if the minimum O&M Rating 2 is met.
5. Click  to save the record.
6. Click  to exit **Add Mode**.
7. Click  to close the window.
8. To view, edit, or delete a Work Task record, simply Right-click on a listing in the grid and select **View Record**, **Edit Record**, or **Delete Record**.

PWD PACP Task per Pipe Defect

Defect	Struct Rating 1	Struct Rating 2	O&M Rating 1	O&M Rating 2	Struct Task 1	Struct Task 2	O&M Task 1	O&M Task 2
B Broken	1				1 Point Repair 1 LF Dig Out			

Record 1 of 28 View Mode Ready...




TV Insp Work Task Per Defect

TV Insp Work Tasks per Defect Tab

You'll use the TV Insp Work Tasks per Defect grid to add additional selection criteria to the record. These include which rehabilitation or replacement methods will be used when certain defects are observed in a pipe's [TV Inspection](#) record. The selection will be based on the defect's Structural rating or O&M rating. To add a Work Task per Defect record to the grid, complete the following steps:

1. Right - click in the grid and select **Add Record**. The following window will appear:

Defect	Struct Rating 1	Struct Rating 2	O&M Rating 1	O&M Rating 2	Struct Task 1	Struct Task 2	O&M Task 1	O&M Task 2

2. Click on the Defect button to select from all available sewer pipe defects (found in the [Inspection Setup](#) module). This is required in order to save the record.
3. Four Rating fields are provided. These allow you to enter the minimum observation ratings that a pipe needs to have in order to be selected for the corresponding rehabilitation or replacement work tasks. When the model is run, the system analyzes the pipe observation information to determine if the criteria established in this module are met. If so, then the Structural or O&M Tasks are selected based on the Ratings defined here.
 - Struct Rating 1 - The minimum structural observation rating required for the Struct Task 1 to be selected.
 - Struct Rating 2 - The minimum structural observation rating required for the Struct Task 2 to be selected.
 - O&M Rating 1 - The minimum O&M observation rating required for the O&M Task 1 to be selected.
 - O&M Rating 2 - The minimum O&M observation rating required for the O&M Task 2 to be selected.
4. For each defect you can choose two Structural Work Tasks and two O&M Work Tasks. These are the rehabilitation and replacement work tasks that will be used by the model run when the identified defect is observed in a selected pipe. These pick lists come from the [Rehab Work Tasks and Costs](#) module.
 - Struct Task 1 - This structural replacement task will be selected if the minimum Struct Rating 1 is met.
 - Struct Task 2 - This structural rehabilitation task will be selected if the minimum Struct Rating 2 is met.
 - O&M Task 1 - This O&M replacement task will be selected if the minimum O&M Rating 1 is met.
 - O&M Task 2 - This O&M rehabilitation task will be selected if the minimum O&M Rating 2 is met.
5. Click  to save the record.
6. Click  to exit **Add Mode**.
7. Click  to close the window.
8. To view, edit, or delete a Work Task record, simply Right - click on a listing in the grid and select **View Record**, **Edit Record**, or **Delete Record**.

PWD Work Tasks Per Pipe Defect

Defect	Struct Rating 1	Struct Rating 2	O&M Rating 1	O&M Rating 2	Struct Task 1	Struct Task 2	O&M Task 1	O&M Task 2
BJL Severe Broken Pipe / Join	1				1			

Record 1 of 21 View Mode Ready...

Material Types

Material Types

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can indicate the type of materials used in the pipe wall and assign a classification to that material. The system will use the settings here to select pipes for rehabilitation and help determine rehab costs. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

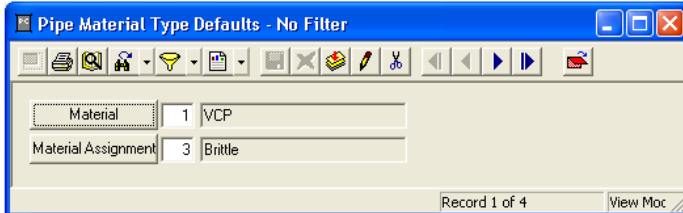
Module Toolbar






For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

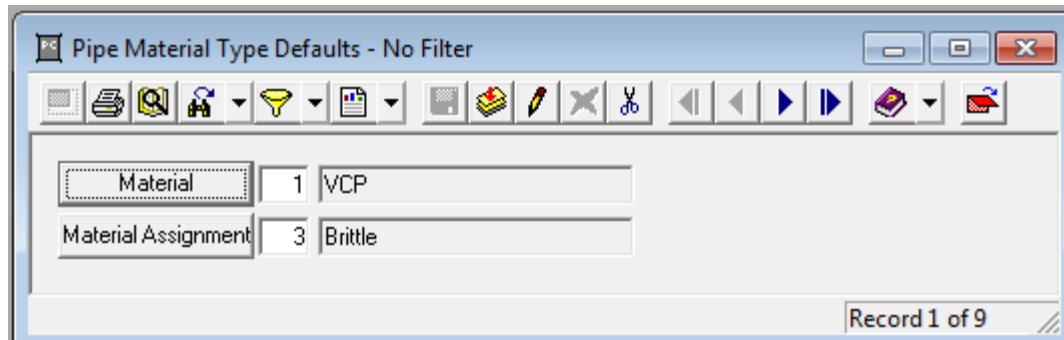
To access the **Material Types** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Material Types** and the following window will appear.



1. The Material pick list comes from the [Pipe Inventory](#) module. You'll use this list to indicate if the pipe wall material is VCP, Concrete, Tile, Brick, CIP, etc.
2. Use the Material Assignment field to indicate if the pipe material is Rigid, Flexible, Brittle, or Unassigned. A selection of Unassigned will force the system to assume the highest possible cost.
3. Click  to save the record.
4. Click  to exit **Add Mode**.
5. Click  to close the window.

Note: The Material field is required in order to save the record.

PWD Pipe Material Type Defaults



Surface Types

Surface Types

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can indicate details about the type of surface found above the pipe. This helps determine the cost for rehabilitation. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

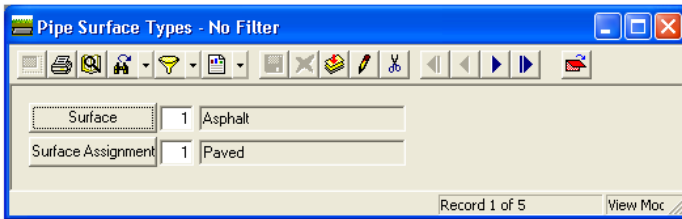
Module Toolbar






For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

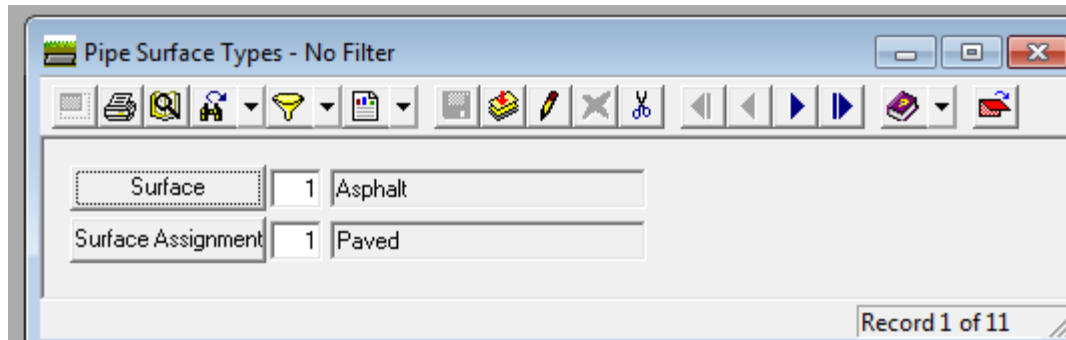
To access the **Surface Types** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Surface Types** and the following window will appear.



1. The Surface pick list comes from the [Pipe Inventory](#) module. Sample pipe surfaces include Asphalt, Dirt/Grass, etc.
2. The Surface Assignment pick list allows you to indicate if the surface above the pipe is Paved, Unpaved, Heavy Traffic, or Unassigned. If you select Unassigned, the system will assume that the surface is Paved to account for the highest possible rehabilitation cost.
3. Click  to save the record.
4. Click  to exit **Add Mode**.
5. Click  to close the window.

Note: The Surface field is required in order to save the record.

PWD Pipe Surface Types



The screenshot shows a software window titled "Pipe Surface Types - No Filter". The window contains a table with two rows of data. The first row shows "Surface" with a value of "1" and "Asphalt". The second row shows "Surface Assignment" with a value of "1" and "Paved". The window also features a toolbar with various icons and a status bar at the bottom right indicating "Record 1 of 11".

Field	Value	Description
Surface	1	Asphalt
Surface Assignment	1	Paved

Record 1 of 11

Accessibility

Accessibility

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. Several setup modules are provided to help you configure your model runs. Here, you can indicate the difficulty of access of various pipe locations. This can influence costs in the model runs. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

Module Toolbar






For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking** + **Ctrl** in that field.

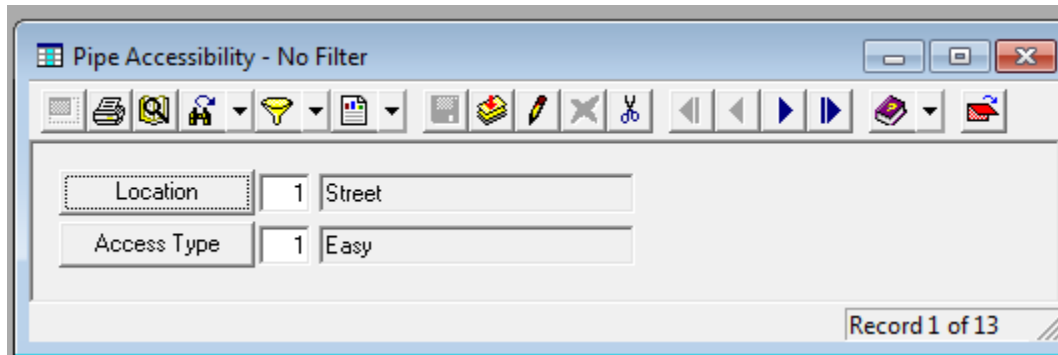
To access the **Accessibility** module, select **Sewer > Sewer Rehab > Rehab Setup > Pipe Rehab Setup > Accessibility** and the following window will appear.



1. Select the Location from the pick list. This list comes from the [Pipe Inventory](#) module. It allows you to indicate whether the pipe is found in the street, alley, easement, etc.
2. The Access Type pick list allows you to indicate whether the pipe's accessibility is Easy, Difficult, or Unassigned. If you select Unassigned, the system will assume that access is Difficult in order to account for the greatest possible cost.
3. Click  to save the record.
4. Click  to exit **Add Mode**.
5. Click  to close the window.

Note: The Location field is required in order to save the record.

PWD Pipe Accessibility



SEWER REHAB MODEL

Sewer Rehab Model

The *Sewer Rehab Model* allows you to define model run parameters, indicate which filterset the model will be run against, and run individual modeling schemes. Details from the model run are stored in the *Pipe Analysis Details* module. For additional information on these two modules, follow the links below:

Model

Model

The **Sewer** module provides you with a modeling program for sewer rehabilitation. In order to conduct a model run, you'll need to complete the [Pipe Rehab Setup](#). After that process you can use this module to create model run parameters, indicate which filterset the model will be run against, and run individual modeling schemes that can help you project costs, assess the system, and help determine which pipes are selected for rehabilitation or replacement. The model then displays results from the completed model runs in easily accessible tables and grids.

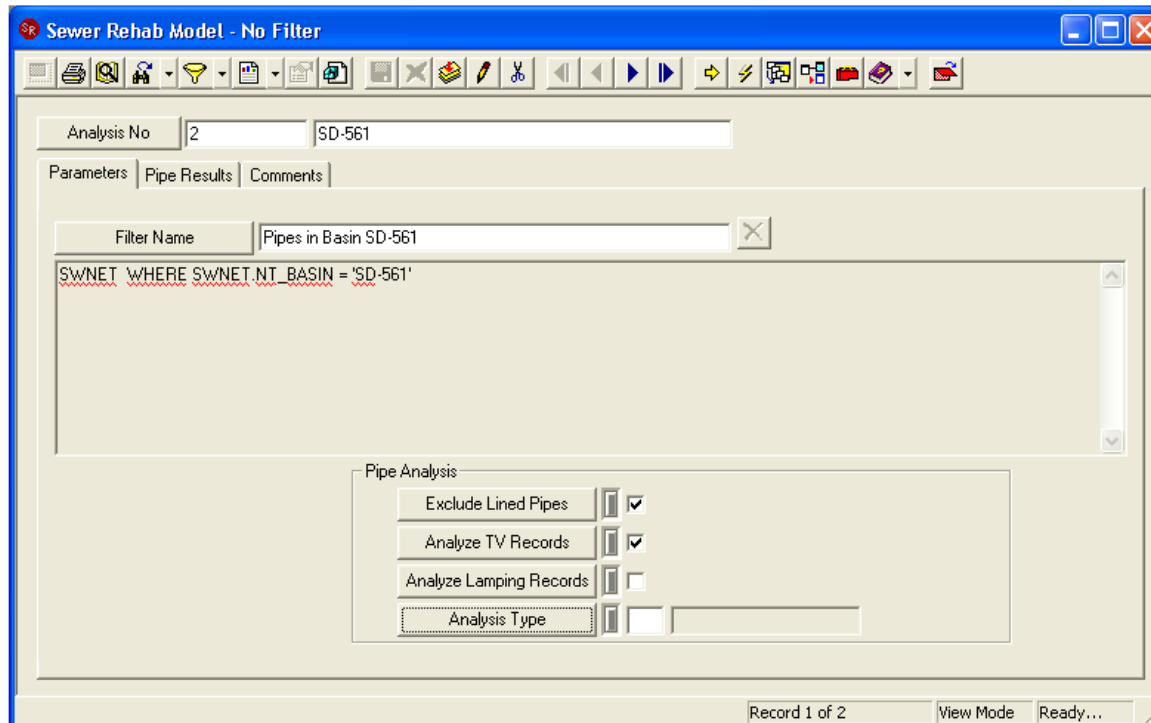
Module Toolbar



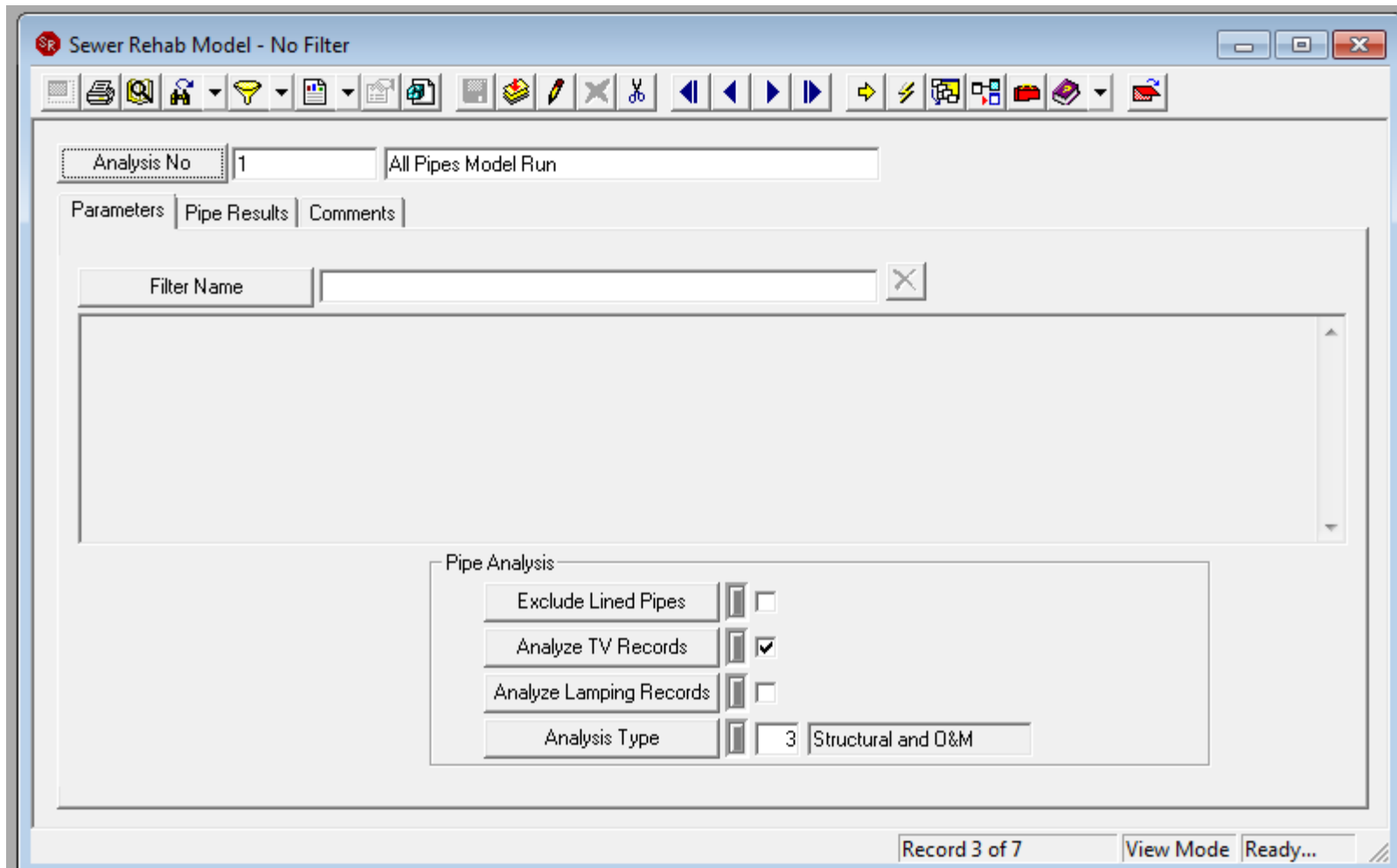
For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

To access the **Sewer Rehab Model**, select **Sewer > Sewer Rehab > Sewer Rehab Model > Model** and the following window will appear.



PWD Model



Parameters Tab

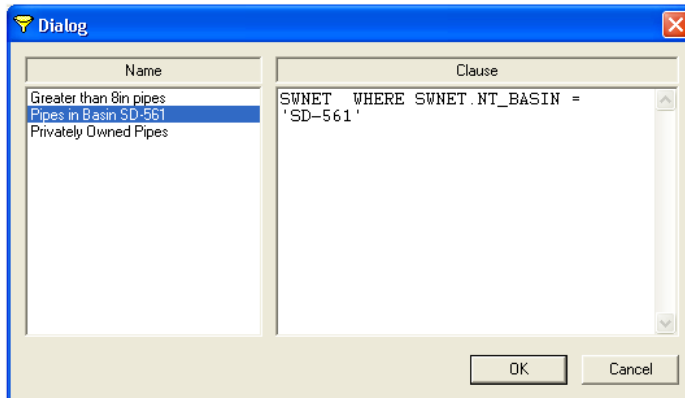
Parameters Tab

This tab allows you to indicate the modeling parameters. You can use the Filter Name fields to indicate which filterset will be analyzed during the model run. The Pipe Analysis fields allow you to indicate which pipes will be included in the model analysis. These sections are described below:


Filters

Filters help you to limit the number of records processed and focus your model on pipes of a certain type, in a particular location, etc. To include a filter, follow the steps below:

1. Click on the Filter Name button. The following dialog will appear:



2. On the left-hand side of the dialog, you'll see a list of all available filters. This list comes from the [Sewer Pipe Inventory](#) module.
3. Highlight a Filter Name. The filter string will appear in the "Clause" grid.
4. Click **OK**. The filter string will be added to the read-only grid on the Parameters tab.

Note: You can use the  button to remove a filter string from the modeling parameters.

Pipe Analysis


The Pipe Analysis checkboxes and pick list allow you to indicate which pipes will be included in the model analysis.

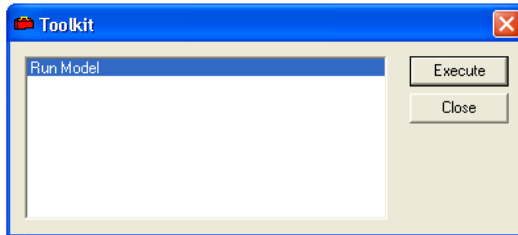
Field Name	Use/Purpose
Exclude Lined Pipes	This checkbox allows you to exclude all lined pipes from the model analysis. Pipe lining is identified in the <i>Pipe Inventory</i> module, Attributes tab.
Analyze TV Records	This checkbox allows you to include TV Inspection records in the model analysis.
Analyze Lamping Records	This checkbox allows you to include Lamping records in the model analysis.
Analysis Type	This field allows you to set three separate modeling runs using Structural Only analysis, O&M Only analysis, or Structural and O&M analysis. The default Analysis Type is 3 - Structural and O&M. Note: The model analysis will look at the Structural and O&M observation data from the <i>TV Inspections</i> or <i>PACP Inspections</i> modules. When an inspection record is entered, the system will determine if it is the most recent inspection for the pipe and designate it as such. Only the most recent inspection data (whether from <i>TV Inspections</i> or <i>PACP Inspections</i>) is used.

Tool Kit Function

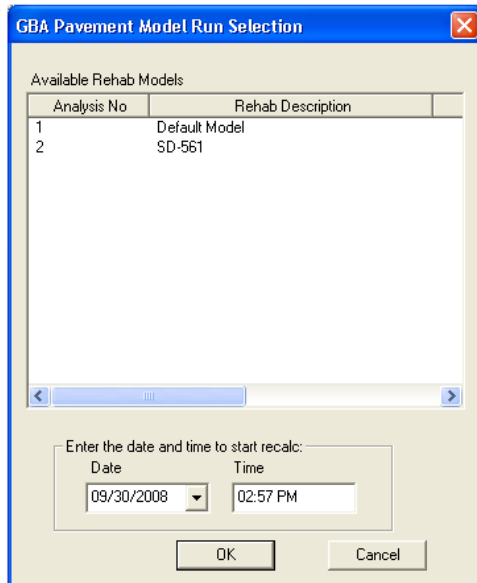
Toolkit Function

The Toolkit function is used for model runs. Once you have completed your model setup in the [Parameters tab](#) above and have included all necessary information in the [Model Setup](#) modules, you can begin your model run. Complete the following steps to use the Toolkit function to generate model run results.

1. To access the Toolkit, click the  button. The following window will appear:



2. Select **Run Model** and click **Execute**. The following window will appear:



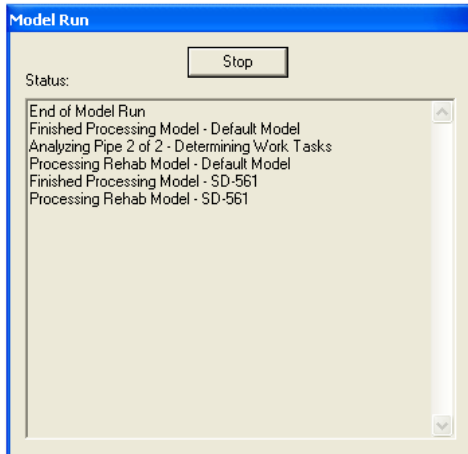
3. Select which models you wish to run from the Available Rehab Models grid.

Note: You can run multiple models at the same time.

4. Enter the date and time for the system to begin the model runs. To begin immediately, press the space bar while your cursor is in the date and time fields.

Tool Kit Function

5. Click **OK** to begin the model run.
6. The following screen will appear apprising you of the model run status. It does this by continually adding the most recent activity to the top of the list. To see a history of what has been accomplished, read the list from bottom to top. When the process is complete, the notation, "End of Model Run", will appear at the top of the list.



PWD Pipe Results

Sewer Rehab Model - No Filter

Analysis No: 1 All Pipes Model Run

Parameters: Pipe Results Comments

Alt Pipe ID	US Structure	DS Structure	Task Desc	All Indiv Task Costs	Pipe Diameter	Pipe Length
L23_17@K23_68	L23_17	K23_68		244376	8	43
K24_31@K24_...	K24_31	K24_29		142656	8	30
L24_1@L24_15	L24_1	L24_15		125146	8	26
K24_64@L24_1	K24_64	L24_1		122571	8	25
L23_33@L23_34	L23_33	L23_34		111851	8	25
M17_45@M17...	M17_45	M17_44		107094	8	26
K24_29@K24_...	K24_29	K24_16		101367	8	33
K24_28@K24_...	K24_28	K24_27		91766	8	26
K24_27@K24_...	K24_27	K24_35		87525	8	26
K23_68@K23_...	K23_68	K23_69		84050	8	18
7231@L21_20	7231	L21_20		78000	6	20
C29_12@C29_...	C29_12	C29_13		72649	18	34
K20_49@L20_17	K20_49	L20_17		72329	8	28
E11_31@E11_...	E11_31	E11_30		69712	8	33
L23_34@L23_46	L23_34	L23_46		65438	8	25
J19_4@J19_5	J19_4	J19_5		65000	8	30
G9_77@G10_42	G9_77	G10_42		65000	8	32
L20_20@L20_22	L20_20	L20_22		60023	8	13

Record 3 of 7 View Mode Ready...

PWD Pipe Results

Sewer Rehab Model - No Filter

Analysis No: 1 All Pipes Model Run

Parameters | Pipe Results | Comments

All Indiv Task Costs	Pipe Diameter	Pipe Length	Flow Removed (gpm)	Ratio (\$/gpd)
244376	8	430.0	0.00	0.000
142656	8	300.0	0.00	0.000
125146	8	267.0	0.00	0.000
122571	8	250.0	0.00	0.000
111851	8	254.8	0.00	0.000
107094	8	267.1	0.00	0.000
101367	8	330.0	0.00	0.000
91766	8	262.0	0.00	0.000
87525	8	262.0	0.00	0.000
84050	8	185.0	0.00	0.000
78000	6	200.0	0.00	0.000
72649	18	346.0	0.00	0.000
72329	8	288.0	0.00	0.000
69712	8	332.9	0.00	0.000
65438	8	250.0	0.00	0.000
65000	8	304.0	0.00	0.000
65000	8	326.6	0.00	0.000
60023	8	136.2	0.00	0.000

Record 3 of 7 View Mode Ready...

Pipe Analysis Details

Pipe Analysis Details

The **Sewer** module provides you with a modeling program for sewer rehabilitation. When model runs have been created, the results for all pipes analyzed during the course of the model run (whether selected for rehabilitation or not) are stored here. These records are created when the model is run; thus, no **Add** button exists in this module. You will be able to edit user-entered data as needed. For further information on the model runs, please reference the [Model Runs](#) help guide.

This module will indicate if the pipe was selected for rehabilitation, it will display the rehab or replacement method recommended, it will calculate the costs for different rehab methods, and it will contain additional pipe attribute information. You'll also use this module to compare the costs to rehabilitate individual defects with the cost to rehab an entire pipe. This helps determine the best course of action for the pipes in your network.

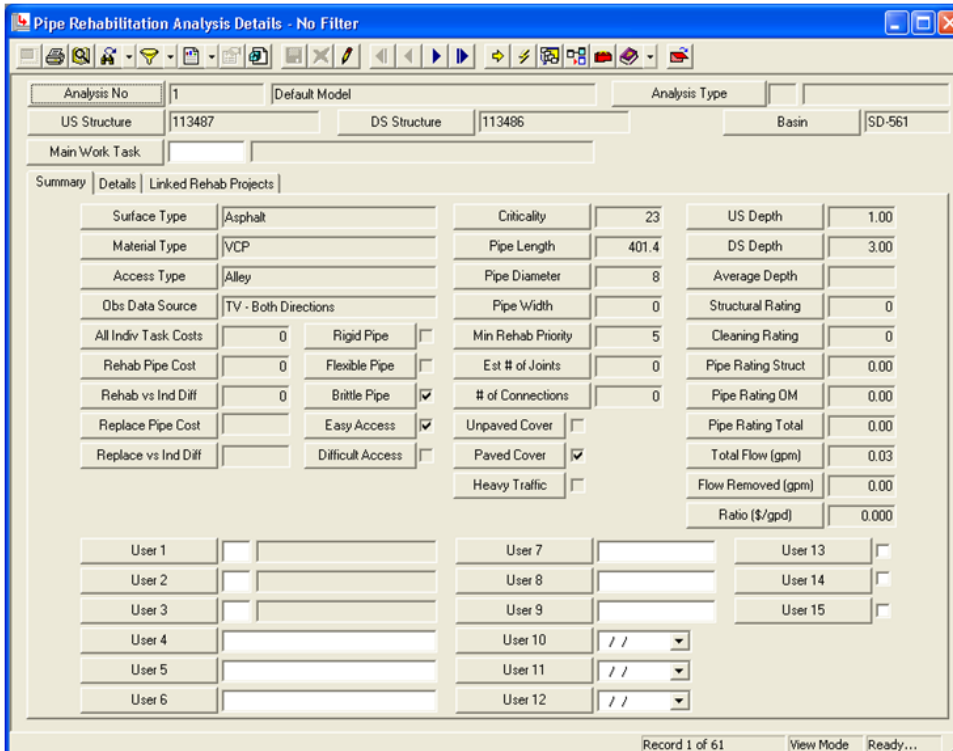
Module Toolbar



For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking** + **Ctrl** in that field.

To access the **Pipe Analysis Details** module, select **Sewer > Sewer Rehab > Sewer Rehab Model > Pipe Analysis Details** and the following window will appear.



Pipe Rehabilitation Analysis Details - No Filter

Analysis No: 1 | Default Model | Analysis Type: |

US Structure: 113487 | DS Structure: 113486 | Basin: SD-561

Main Work Task: |

Summary | Details | Linked Rehab Projects

Surface Type	Asphalt	Criticality	23	US Depth	1.00
Material Type	VCP	Pipe Length	401.4	DS Depth	3.00
Access Type	Alley	Pipe Diameter	8	Average Depth	
Obs Data Source	TV - Both Directions	Pipe Width	0	Structural Rating	0
All Indiv Task Costs	0	Min Rehab Priority	5	Cleaning Rating	0
Rehab Pipe Cost	0	Est # of Joints	0	Pipe Rating Struct	0.00
Rehab vs Ind Diff	0	# of Connections	0	Pipe Rating OM	0.00
Replace Pipe Cost		Unpaved Cover	<input type="checkbox"/>	Pipe Rating Total	0.00
Replace vs Ind Diff		Paved Cover	<input checked="" type="checkbox"/>	Total Flow (gpm)	0.03
		Heavy Traffic	<input type="checkbox"/>	Flow Removed (gpm)	0.00
				Ratio (\$/gpd)	0.000

User 1: | | | User 7: | | | User 13:

User 2: | | | User 8: | | | User 14:

User 3: | | | User 9: | | | User 15:

User 4: | | | User 10: // |

User 5: | | | User 11: // |

User 6: | | | User 12: // |

Record 1 of 61 | View Mode | Ready...

PWD Pipe Analysis Details

Pipe Rehabilitation Analysis Details - Unnamed Filter Set

Analysis No: 1 | All Pipes Model Run | Analysis Type:

US Structure: J5_3 | DS Structure: J5_5 | Alt Pipe ID: J5_3@J5_5

Main Work Task: | Basin: H7_901

Summary | Details | Linked Rehab Projects

Surface Type	Asphalt	Criticality	0	US Depth	6.37
Material Type	VCP	Pipe Length	321.0	DS Depth	14.62
Access Type	Street	Pipe Diameter	8	Average Depth	10.49
Obs Data Source	TV - US to DS	Pipe Width	0	Structural Rating	0
All Indiv Task Costs	0	Min Rehab Priority	0	Cleaning Rating	64
Rehab Pipe Cost	32100	Est # of Joints	0	Pipe Rating Struct	0.00
Rehab vs Ind Diff	32100	# of Connections	0	Pipe Rating DM	0.00
Replace Pipe Cost	53902	Unpaved Cover	<input type="checkbox"/>	Pipe Rating Total	0.00
Replace vs Ind Diff	53902	Paved Cover	<input checked="" type="checkbox"/>	Total Flow (gpm)	0.00
		Heavy Traffic	<input type="checkbox"/>	Flow Removed (gpm)	0.00
				Ratio (\$/gpd)	0.000

Reviewed
 Expert Review
 Approved
 User 4:
 User 5:
 User 6:

User 7:
 User 8:
 User 9:
 User 10: // ▾
 User 11: // ▾
 User 12: // ▾

User 13:
 User 14:
 User 15:

Record 1 of 7509 | View Mode | Ready...

PWD Pipe Analysis Details

Pipe Rehabilitation Analysis Details - Unnamed Filter Set

Analysis No: 1 | All Pipes Model Run | Analysis Type: []

US Structure: M22_34 | DS Structure: M21_28 | Alt Pipe ID: M22_34@M21_28

Main Work Task: [] | Basin: M22_19

Summary | Details | Linked Rehab Projects

Surface Type	Asphalt	Criticality	0	US Depth	7.67
Material Type	VCP	Pipe Length	263.8	DS Depth	8.93
Access Type	Street	Pipe Diameter	8	Average Depth	8.30
Obs Data Source	PACP - US to DS	Pipe Width	0	Structural Rating	0
All Indiv Task Costs	13000	Min Rehab Priority	0	Cleaning Rating	0
Rehab Pipe Cost	26380	Est # of Joints	0	Pipe Rating Struct	1.00
Rehab vs Ind Diff	13380	# of Connections	5	Pipe Rating DM	0.00
Replace Pipe Cost	42208	Unpaved Cover	<input type="checkbox"/>	Pipe Rating Total	1.00
Replace vs Ind Diff	29208	Paved Cover	<input checked="" type="checkbox"/>	Total Flow (gpm)	0.00
		Heavy Traffic	<input type="checkbox"/>	Flow Removed (gpm)	0.00
				Ratio (\$/gpd)	0.000

Reviewed	1	Reviewed	User 7	[]	User 13	<input type="checkbox"/>
Expert Review	[]		User 8	[]	User 14	<input type="checkbox"/>
Approved	1	Supervisor Approved	User 9	[]	User 15	<input type="checkbox"/>
User 4	[]		User 10	//		
User 5	[]		User 11	//		
User 6	[]		User 12	//		

Record 1 of 837 | View Mode | Ready...

PWD Detail Tab

Pipe Rehabilitation Analysis Details - Unnamed Filter Set

Analysis No: 1 | All Pipes Model Run | Analysis Type: []

US Structure: M22_34 | DS Structure: M21_28 | Alt Pipe ID: M22_34@M21_28

Main Work Task: [] | Basin: M22_19

Summary | Details | Linked Rehab Projects

Pipe Defects

Defect #	Repair #	Selected	Defect Obs Text	Struct Rating	O&M Rating	Distance /	Continuous Defect
1		No	Manhole	0	0	0.0	No
2		No	Water Level	0	0	8.1	No
3		No	Tap Factory	0	0	8.9	No
4		No	Tap Factory	0	0	30.8	No
5		No	Tap Factory	0	0	63.1	No
6		No	Tap Factory	0	0	105.8	No
7		No	Tap Factory	0	0	194.1	No
8	1	Yes	Joint Offset Medium	1	0	250.2	No
9		No	Manhole	0	0	252.8	No

Pipe Work Tasks

Repair # /	Work Task	Work Task Text	Start	Stop	Selected	Cost	Rehab Proj Descr
1 / 1		Point Repair 1 LF Dig Out	250	250	Yes	13000	
2 / 7		Complete Line Repair CIPP	0	264	No	26380	
3 / 8		Complete Line Repair Remo...	0	264	No	42208	

Record 1 of 837 | View Mode | Ready...

Pipe Defects

Pipe Defects

The Pipe Defects grid displays all Defects observed during the **TV or Lamping Inspection** (based on your selections in the [model run parameters](#)). These defect records contain the ratings that are used by the system in conjunction with the [Setup](#) tables to determine which rehab work tasks are applicable to the pipe in this record. A sample of the Pipe Defects grid appears below. There, you'll see each defect record identified by its observation text, the footage at which it was observed, and the source of the observation (TV or Lamp).

Defect #	Repair #	Selected	Defect Obs Text	Rating	Distance	Conn	Flow	Source
1		No	Crack-Radial	3	2.0	No	0.01	TV
2		No	Crack-Horizontal	3	4.5	No	0.01	TV
3		No	Crack-Radial	3	6.0	No	0.01	TV
4		No	Crack-Radial	4	10.0	Yes	0.02	TV
5		No	Debris	2	12.0	No	0.00	TV
6		No	Scaling	3	16.0	No	0.00	TV
7		No	Corrosion	3	22.0	No	0.00	TV
8		No	Crack-Horizontal	3	29.0	No	0.01	TV
9		No	Infiltration	3	33.0	Yes	0.00	TV
10		No	Corrosion	2	36.0	No	0.00	TV
11		No	Sag	3	39.0	No	0.00	TV
12		No	Grease	3	44.0	No	0.00	TV
13		No	Debris	3	48.0	No	0.00	TV
14		No	Corrosion	3	54.0	No	0.00	TV
15		No	Crack-Radial	2	57.0	No	0.00	TV
16		No	Crack-Radial	2	61.0	Yes	0.00	TV

For additional information on the Pipe Defects, double click on a listing or right-click and select **View Record**. A window similar to the following will appear. In addition to the information listed above, these records also identify whether a defect was selected for rehab, the Structural or O&M Rating values used, whether it is at a building connection, and whether it is a continuous defect.

- Defects are selected for rehab if they are identified by the system as being in need of repair.
- Continuous defects have a unique set of circumstances. Follow the link for additional information on [continuous defects](#).
- Pipe ratings are recorded differently based on whether they are derived from **PACP Inspection** records or **TV Inspection** records. Follow the link for additional information on [Pipe Ratings](#).

Pipe Analysis Details
✕

Source: TV

Distance: 27.0

Defect Obs Text: Crack-Horizontal

Start Clock: 0 End Clock: 0

Struct Rating: 2 O&M Rating:

Flow: 0.00 Building Connection:

Lateral Location:

Location: Upper Right

User 1: User 2:

Defect #: 2 Continuous Defect:

Selected for Repair: Contin Defect Obs #:

Repair #: End Contin Footage:

User 5: User 6:

Observation #: 2

User 3: User 4:

PWD Pipe Defects

The screenshot shows a software window titled "Pipe Analysis Details" with a toolbar at the top containing icons for home, edit, close, navigation, and help. The main area contains several input fields and checkboxes:

Source	PACP	Defect #	8	Continuous Defect	<input type="checkbox"/>
Distance	250.2	Selected for Repair	<input checked="" type="checkbox"/>	Continuous Length	
Defect Obs Text	Joint Offset Medium	Repair #	1		
Start Clock	<input type="checkbox"/>	End Clock	<input type="checkbox"/>		
Struct Rating	1	O&M Rating	0	User 5	<input type="checkbox"/>
Flow		Building Connection	<input type="checkbox"/>	User 6	<input type="checkbox"/>
Lateral Location					
Location		Observation #	8		
User 1	<input type="checkbox"/>	User 3			
User 2	<input type="checkbox"/>	User 4			

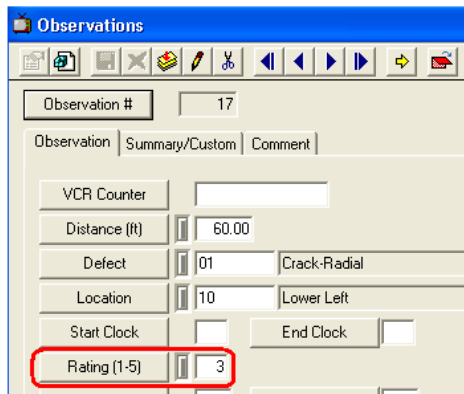
At the bottom right, there is a status bar with the text "Record 8 of 9", "View Mode", and "Ready..."

Pipe Ratings

Pipe Ratings

Pipe Ratings are recorded in the Pipe Analysis Details dialog as follows:

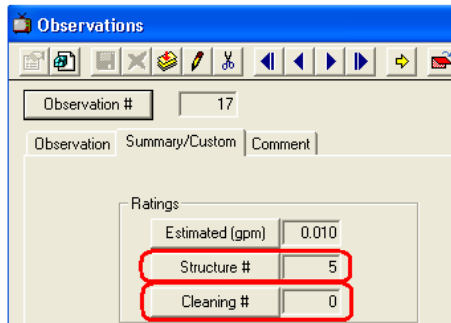
1. For PACP records, a defect can only be either a Structural defect or an O&M defect. This corresponds to the way in which observations are recorded in the [PACP Inspection](#) module.
2. For TV Inspection records, the process for assigning a rating is as follows:
 - The rating from the [TV Observation](#) will be used. In the example below, the rating is a 3.



The screenshot shows the 'Observations' dialog box with the following fields and values:

Field	Value
Observation #	17
Observation	Summary/Custom
VCR Counter	
Distance (ft)	60.00
Defect	01 Crack-Radial
Location	10 Lower Left
Start Clock	
End Clock	
Rating (1-5)	3

- The rating will be assigned either or both the Structural Rating and/or O&M Rating depending on the [Structural # and Cleaning #](#) for that defect. If either value is greater than 0, then that Rating is assigned in the Pipe Analysis Details dialog.



The screenshot shows the 'Observations' dialog box with the following fields and values:

Field	Value
Observation #	17
Observation	Summary/Custom
Estimated (gpm)	0.010
Structure #	5
Cleaning #	0

Pipe Work Tasks

Pipe Work Tasks

The individual work tasks are displayed in the Pipe Work Tasks grid. These correspond with any Defects selected for rehabilitation in the [Pipe Defects](#) grid.

1. Each selected task is identified by a repair number, task text, and start/stop location.
 - Start/stop locations that have different footages extend over a length of pipe.
 - Start/stop locations at the same footage indicate a point repair.
 - A sample of this grid with both types of footages can be seen below:


Repair #/	Work Task	Work Task Text	Start	Stop	Selected	Cost	Rehab Proj Descr
1	03	Line Clean-Heavy Deposition	0	332	Yes	1992	
2	10	Remove Mainline Blockage	130	130	Yes	380	
3	05	Remove Roots, Clean, TV Inspect Line	0	332	Yes	2324	
4	21	Install Cured-In-Place Liner	0	332	No	17264	

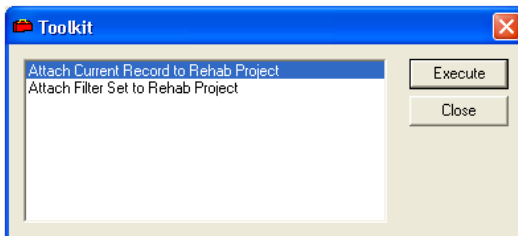
2. Additionally, this grid displays the cost for each individual work task that was selected. You can choose to unselect tasks in this grid by Right-clicking on a task listing and selecting **Unselect Task**. If using the [Rehab Projects](#) module, this will serve to eliminate the work task from the **Rehab Project**.
3. The system calculates all per task costs as well as all per pipe costs (cost to rehab the entire pipe). These costs are listed on the [Summary tab](#) for comparison. These should help you determine if it's more cost effective to rehab the entire pipe or rehab it on a task by task basis.

Toolkit Function

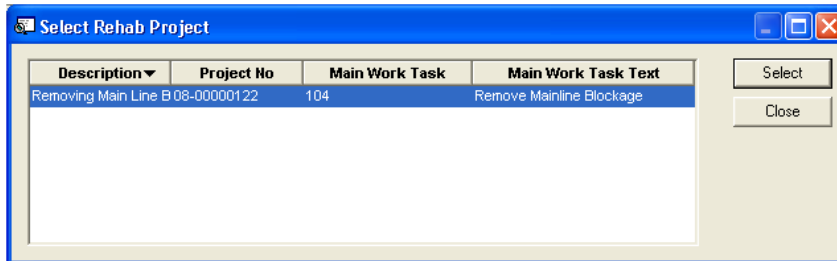
Toolkit Function

The Toolkit functions are used to attach Pipe Analysis records to the [Rehab Projects](#) module. Complete the following steps to use the Toolkit functions.

1. To access the Toolkit, click the  button. The following window will appear:



2. You can use this Toolkit to either attach the current *Pipe Analysis* record or a filtered set of *Pipe Analysis* records to an existing *Rehab Project*. Highlight your selection and click *Execute*. The following window will appear:



3. Highlight the Rehab Project to which you'd like to attach your records and click *Select*. The applicable pipes will be added to the Rehab Project's [Pipes](#) tab.

REHAB PROJECTS

Rehab Projects

The **Sewer** module provides you with a modeling program for sewer rehabilitation. This program centers around the model runs. The **Rehab Projects** module can be used to group modeling results into more manageable work projects. For example, you may create a project for work to be performed in a single basin. Alternatively, you may create a project where the same work task needs to be performed on multiple pipes in your network. For more information on the model runs, please reference the [Sewer Rehab Model](#) help guide.

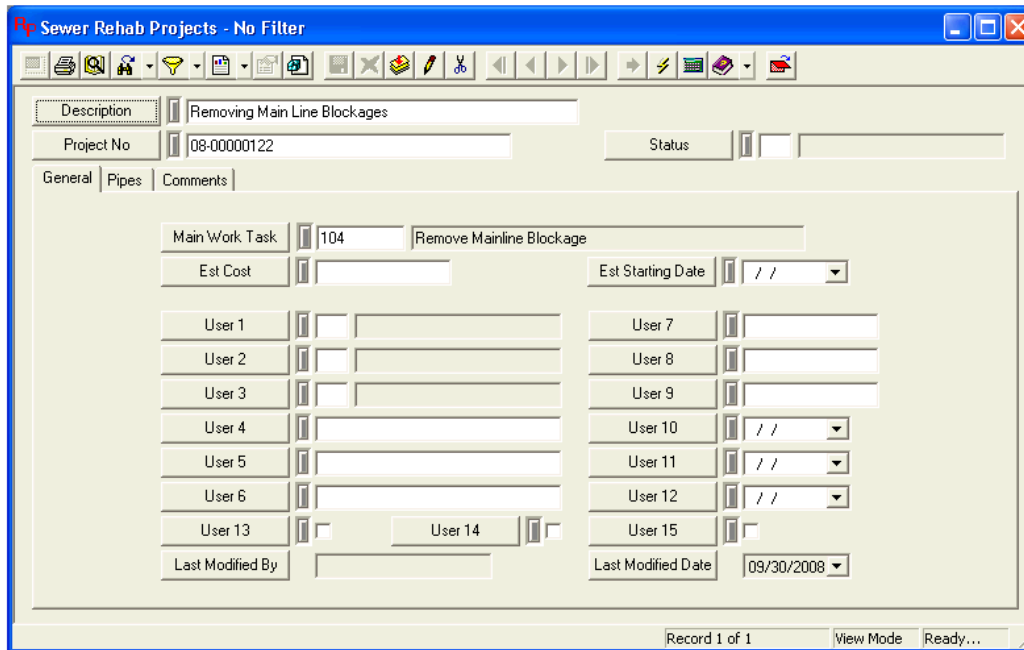
Module Toolbar



For more information about the tools available in this module go [here](#).

Note: Users can view any field definition by **right clicking + Ctrl** in that field.

To access the **Rehab Projects** module, select **Sewer > Sewer Rehab > Rehab Projects** and the following window will appear.



Sewer Rehab Projects - No Filter

Description: Removing Main Line Blockages

Project No: 08-00000122

Status:

General | Pipes | Comments

Main Work Task: 104 Remove Mainline Blockage

Est Cost:

Est Starting Date: //

User 1:

User 2:

User 3:

User 4:

User 5:

User 6:

User 7:

User 8:

User 9:

User 10: //

User 11: //

User 12: //

User 13:

User 14:

User 15:

Last Modified By:

Last Modified Date: 09/30/2008

Record 1 of 1 View Mode Ready...

Pipes in Project

Pipes in Project




The pipes in this grid are added by the system when you run one of the [Toolkit](#) options in the *Pipe Analysis Details* module. Those options allow you to associate pipes with this *Rehab Project* module from either a single *Details* record or filtered set of records. A sample of this grid appears below. As you can see, it identifies each pipe by upstream and downstream structure, address, and depth as well as pipe diameter and length.

US Structure ▾	DS Structure	US Address	DS Address	US Depth	DS Depth	Pipe Diameter	Pipe Le [▲]
127439	127437	E STOTTLER ...	E STOTTLER ...	1261.10	1261.03	10	
117610	117609	S ROANOKE ST	S ROANOKE ST	0.00	0.00	8	
117023	117022	E RANCH CT	E RANCH CT	0.00	0.00	8	
116856	119554	E SHERRI CT	E SHERRI CT	0.00	1274.58	8	
113625	113624	E TAMARISK ...	E ROBIN LN	3.64	3.20	8	
113616	113618		W GALVESTO...	1271.18	6.00	8	
113491	113494	N POPLAR CT	S QUINN CT	2.35	2.10	8	

Pipes in Project Cont.

1. To Add additional pipes to the project, or View, Edit, or Delete existing pipes, Right-click on a listing in the grid and make your selection. A window similar to the following will appear:

The screenshot shows the 'Pipes in Project' dialog box. The top section contains fields for 'US Structure' (116856), 'DS Structure' (119554), 'E SHERRI CT', and 'US Depth' (0.00). Below this is a 'Pipe Details' tab with fields for Basin, Pipe Length (57.6), Surface Type (Concrete), Est Cost (0), Pipe Diameter (8), Material Type (VCP), # of Building Taps (0), Pipe Width (0), and Access Type (Alley). At the bottom, there are 15 user-defined fields (User 1 to User 15) with various input types like checkboxes and dropdowns. The status bar at the bottom indicates 'Record 4 of 7', 'View Mode', and 'Ready...'.

2. Use the fields provided to record the Estimated Cost, number of Building Taps, Pipe Length, Pipe Diameter, Surface Type, and Material Type. The Basin and Access Type information are carried over from the related [Pipe Inventory](#) record.
3. You can record custom information in the user-defined fields at the bottom of the Pipe Details tab. These fields include:
 - Code-type - User-defined, pick list fields.
 - Alphanumeric - Allows you to enter letters or numbers in any combination.
 - Check-box - Used to indicate yes/no or on/off.
 - Numerical - Accepts numeric digits only.
 - Date - Provides a popup calendar allowing you to select a date.
4. Additionally, you can record Comments on the tab provided. Simply place your cursor in the large text field and begin typing.
5. Click  to save the record.
6. Click  to exit **Add Mode**.
7. Click  to close the window.

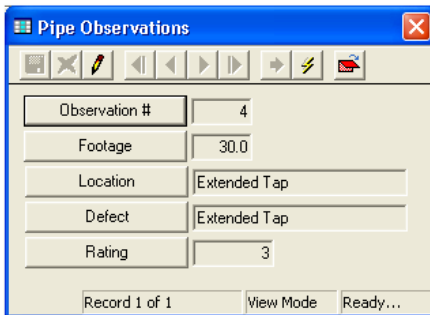
Pipe Building Connections

Pipe Building Connections

This grid identifies Pipe Observations for any building connections in the pipe highlighted in the [Pipes in Project](#) grid. To view a different pipe's building connections, simply click on a different pipe in the previous grid. A sample of the Pipe Building Connections grid appear below. It identifies observations for each connection by observation number, footage, location, defect, and rating.

Obs #	Footage	Location	Defect	Rating
1	5.0	Lower Left	Crack-Horizontal	3

To View or Edit Pipe Observation details, Right-click on a listing in the grid and make your selection. A window similar to the following will appear:



The screenshot shows a dialog box titled "Pipe Observations" with a toolbar at the top containing icons for home, back, forward, and search. Below the toolbar are five input fields for observation details:

Observation #	4
Footage	30.0
Location	Extended Tap
Defect	Extended Tap
Rating	3

At the bottom of the dialog, there is a status bar showing "Record 1 of 1", "View Mode", and "Ready..."

Pipe Individual Rehab Items

Pipe Individual Rehab Items

This grid identifies individual rehab tasks for the pipe highlighted in the [Pipes in Project](#) grid. To view a different pipe's rehab tasks, simply click on a different pipe in the previous grid.

A sample of the Pipe Individual Rehab Items grid appear below. It identifies tasks by repair number, task code, and task text. It also indicates whether the task was selected by the model run, the pipe's start and stop footage, pipe length, and estimated task cost.



Note: Only the rehab work tasks that were selected in the [Pipe Analysis Details](#) module will appear in the *Project* record.

Repair #	Work Task	Work Task Text	Task
1	104	Remove Mainline Blockage	Yes
2	102	Remove Roots, Clean, TV In...	Yes
3	105	Line Clean-Heavy Deposition	Yes

Pipe Individual Rehab Items Cont.

1. To Add additional work tasks to the project, or View, Edit, or Delete existing tasks, Right-click on a listing in the grid and make your selection. A window similar to the following will appear:

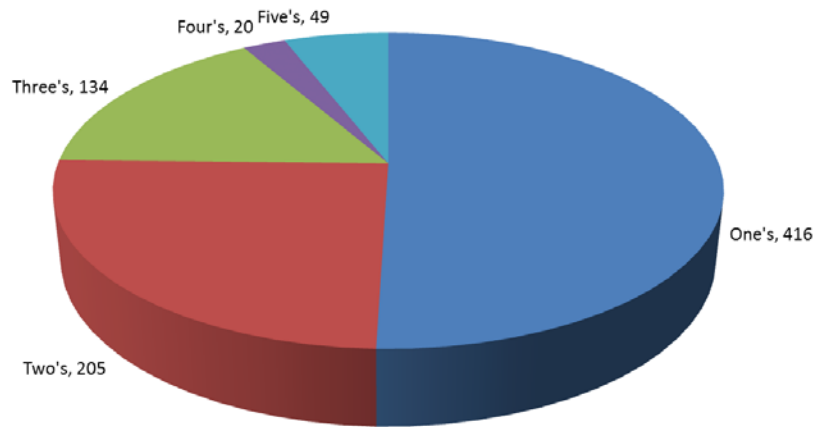
The screenshot shows a software dialog box titled "Pipes Repairs". It features a toolbar with icons for save, delete, edit, and other actions. Below the toolbar are several input fields: "Repair #" with value "1", "Work Task" with value "104" and a dropdown arrow, "Remove Mainline Blockage" (text), "Task Selected" with a checked checkbox, "Start" with value "4", "Length" with value "0", "Stop" with value "4", and "Est Cost" with value "0". Below these fields is a grid of 15 user-defined fields, each with a label (User 1 to User 15), a small icon, and an input field. User 10, 11, and 12 have dropdown menus with " //" as the selected value. At the bottom right, there are buttons for "Record 1 of 2", "View Mode", and "Ready..."

2. Use the fields provided to record the Repair #, Start and Stop footages, pipe Length, and Estimated Cost.
3. The Work Task field allows you to select a Rehab Task from the pick list. This list comes from the [Rehab Work Tasks and Costs](#) module.
4. The Task Selected checkbox is used to indicate if the work task was selected in the model run.
5. You can record custom information in the user-defined fields at the bottom of the dialog. These fields include:
 - Code-type - User-defined, pick list fields.
 - Alphanumeric - Allows you to enter letters or numbers in any combination.
 - Check-box - Used to indicate yes/no or on/off.
 - Numerical - Accepts numeric digits only.
 - Date - Provides a popup calendar allowing you to select a date.
6. Click  to save the record.
7. Click  to exit **Add Mode**.

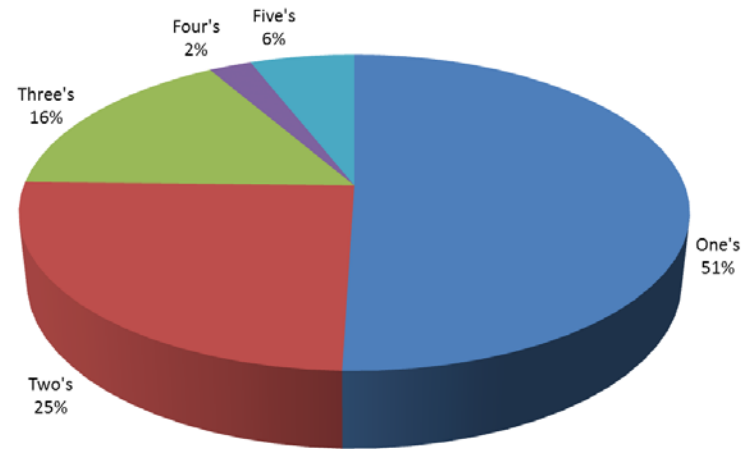
Sewer Rehabilitation Results

Total Number of Structural Rating Items
Prior to Staff Evaluation - 824

Distribution of Structural Ratings by Percentage



Distribution of Structural Ratings by Amount



Demo

- Costs
- Map
- Projects

Demo

- [Cost Sheet All Structural Defects](#)
- [Cost Sheet Only #5 Structural Defects](#)
- Costs
- Map
- Projects