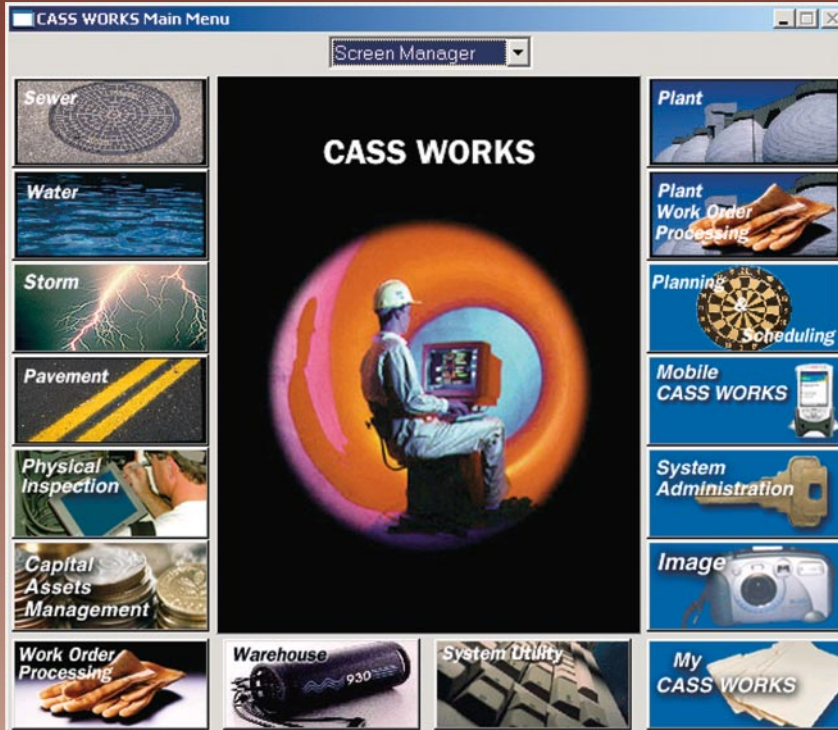


PRODUCT FEATURES

# CASS WORKS®

Version 8



INFRASTRUCTURE MANAGER

## INFRASTRUCTURE MANAGER

**INFRASTRUCTURE MANAGERS** and engineers face the challenging job of improving operations and services with a limited and often inadequate budget. At the same time, the utility systems they manage continue to age and often fail with increasing frequency. With this combination of factors, agencies must find a way to work more efficiently, control costs, and optimize use of existing resources.

**AT RJN GROUP, INC.**, we know what it takes to achieve cost-effective methods to optimize existing maintenance resources. CASS WORKS is designed for the capture, storage, analysis, reporting, and distribution of information for your Infrastructure

Maintenance Management System (IMMS). But achieving effective maintenance practices takes more than software. Engineering knowledge, project management and implementation expertise, and individualized training provides the framework for a successful computerized information management system. CASS WORKS is a flexible software system that adapts to your agency's desired business practices.

**A DIGITAL SYSTEM** is less expensive to manage and maintain, and more efficient than any existing manual approach, translating into dollar savings.

**INFORMATION** is readily available at your fingertips. You have access to the latest inventory, maintenance inspection, and historical information, with the capability to run complex engineering modeling scenarios.

**CASS WORKS** contains a variety of tools for data access and display with advanced query capabilities.

**CASS WORKS** is adaptable and can integrate into your existing software systems (GIS, financial, accounting, human resources and warehouse). The access to data is unlimited.

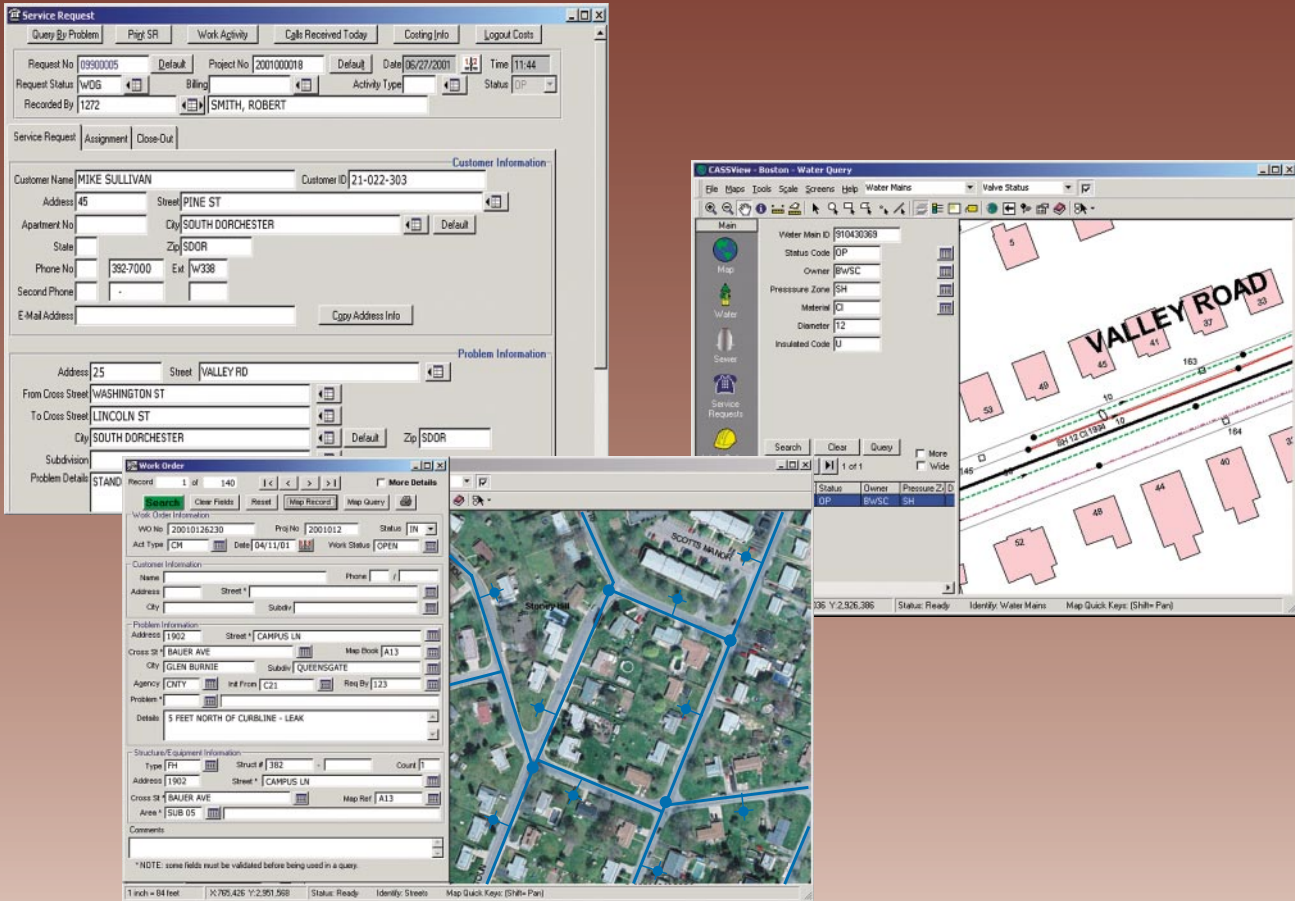


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# CASS WORKS®

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CASSView

## CASSView

**INTEGRATES** an infrastructure maintenance management system in an efficient Map Objects environment.

**OFFERS** visual data on demand in a database-driven mapping application.

**PROVIDES** users with immediate, widespread access to maintenance information, as-built records, maps and GIS data.

**ISSUE** queries in CASS WORKS and view attribute and location information in CASSView.

**VIEW** dynamic displays of current service request and work order information including mapping of routine and repetitive work.

**CREATE** maps of any maintenance of work history data such as locations of major failures or complaints such as main breaks or line stoppages.

**DISPLAY** maps with color-coded locations for various classifications of work activities, types or failures, or determined causes.

**OBTAIN** access to scanned as-built records or utility maps.

**SHOW** query results in CASSView or CASS WORKS.

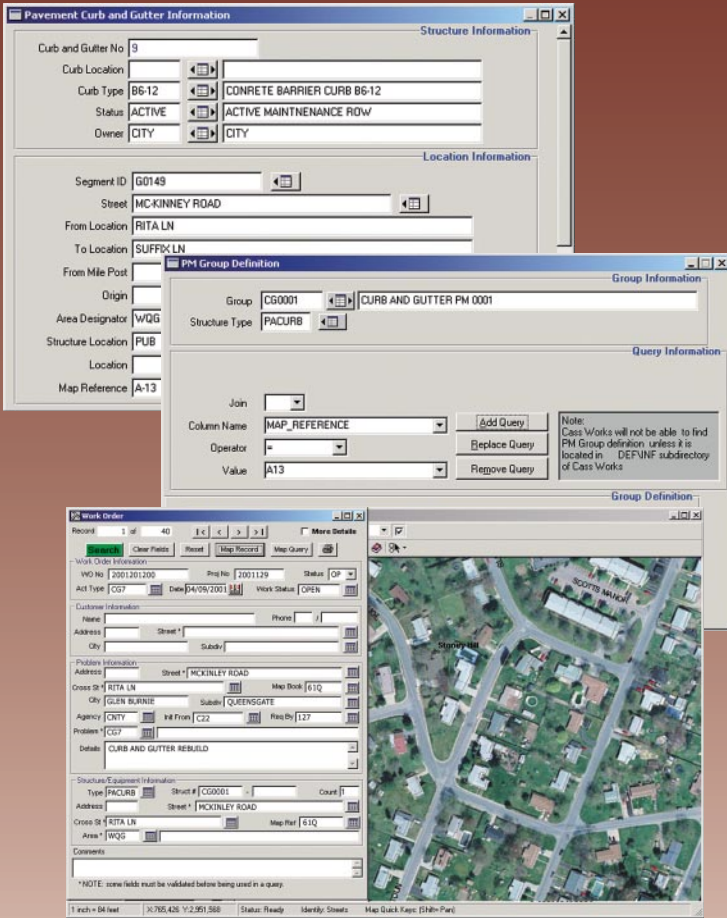


## PRODUCT FEATURES

# CASS WORKS®

## Version 8

PAVEMENT MAINTENANCE MANAGEMENT



## PAVEMENT MAINTENANCE MANAGEMENT

**MAINTAINS** inventories for pavement segments, signs, signals, street lights, pavement markings, guard rails, bridges, curb and gutters, and sidewalks.

**LINKS** street appurtenances to specific pavement segments.

**TRACKS** inspection information for pavement segments, road conditions, guard rails, and sidewalks.

**ISSUES** work orders using any user-specified combination of date range, structure type, maintenance category and priority.

**RECORDS** multiple maintenance activities on a single work order with job logout prompts and performance measurements.

**PROVIDES** a complete history of all maintenance activities with hot links to inspection records.

**ACCOUNTS** for maintenance costs including personnel, materials, equipment, and contractors.

**MAINTAINS** stockroom inventories of all parts, materials, and equipment.

**FACILITATES** both standard and ad hoc reporting. Prints maintenance task summaries for given period (weekly, monthly, quarterly or annually).

**PROVIDES** dynamic linking of digital images (as-builts, schematics) to asset inventories, work orders, GIS and AM/FM.

**WEB ENABLES** information through enterprise reporting tools.

**MANAGES** information for Capital Asset Management and GASB 34 reporting.



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PRODUCT FEATURES

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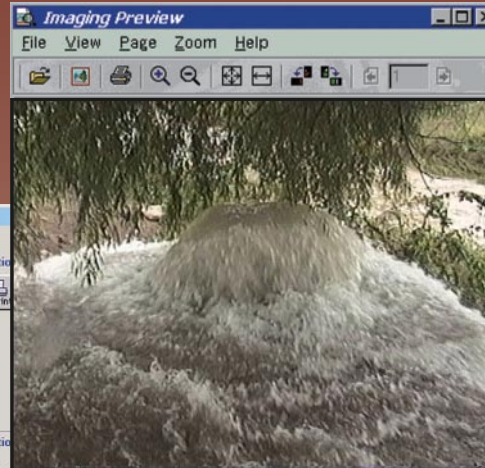
**Manhole Inspection**

Dyed Water | Smoke | TV Data | Visual Pipe | Manhole Info | Line Segment

Manhole No: M234  
 Address: 1200 Street: ROSS AV  
 Cross Street: ANTHONY WAYNE AV  
 Inspection Date: 04/16/1998 Inspected By: 134

**Surface Information**

Precipitation: L RAIN LIGHT RAIN  
 Ground Condition: DAMP DAMP - MOIST / SOFT  
 Manhole Location: 07 GRASS EASEMENT  
 Subject to Ponding: NO  
 Above/Below Grade: Ponding Area Drained (sq. ft): Distance (in): 4.00



**Television Data**

Dyed Water | Manhole | Smoke | Visual Pipe | Manhole Info | Structure Info | Repair Segment

Structure No: UP M236 M235 DOWN  
 Televised Date: 07/18/2001 Time Televised: 10:00 AM AM or PM  
 Structure Type: SELS SEWER LINE SEGMENT  
 Work Order No: 20011902 Operator ID: RC OBSERVATIONS  
 Precipitation: 01 NONE  
 Ground Condition: 01 DRY  
 Surface Type: 01 PAVED

**Attribute Information**

Pipe Material: 03 PVC  
 Diameter (in): 8 Depth (ft): 10.0 Length (ft): 250.0  
 Upstream Depth (ft): 10.43 Downstream Depth (ft): 10.41 Length Between Joints (ft): 10.0  
 Joint Type: STD STANDARD  
 Test Pressure (psi): 0.00 Tape No: 010717

**TV Observations**

Structure No: M236 -- M236  
 Date Televised: 07/18/2001 Repairs: Severity: Image Mgmt  
 Length: 250.0 (ft) Grout: Comments: Print

Footage	Code	Description	Svity Ring	Tape Index	Picture No	Video Pic Number
1	0.0	01 UPSTREAM MANHOLE	0	0		
2	25.0	14 JOINT W/ MEDIUM ROOTS	20	101		00000041
3	50.0	29 PIPE, COLLAPSED	100	202		
4	55.0	30 PIPE W/ HOLE	100			00000042
5	120.0	45 SERVICE CONNECTION	0	525		
6	175.0	45 SERVICE CONNECTION	0	735		
7	235.0	15 JOINT W/ HEAVY ROOTS	60	900		00000043
8	240.0	38 PIPE W/ GREASE	5	1000		00000044
9	250.0	02 DOWNSTREAM MANHOLE	0	1010		
10						
11						
12						



PHYSICAL INSPECTION

## PHYSICAL INSPECTION

**TRACKS** physical inspection results on sewer TV observations, smoke and dye water testing, manhole, visual pipe and building inspections.

**CALCULATES** rehabilitation and repair costs based on industry cost factors and line defects.

**DISPLAYS** graphic schematics of line segment defects and service connections.

**IMPORTS TV** observations, images, and inspection records from field data collection devices.

**ANALYZES** condition of sanitary sewer structures and historical inspection records.

**COLLECTS** and maintains common structure inventories with maintenance management, hydraulic modeling, and geographical information systems (GIS).

**DYNAMIC** linking to GIS and AM/FM.

**CERTIFIED** by NASSCO for PACP code compliance/data export to NASSCO standard data exchange format.



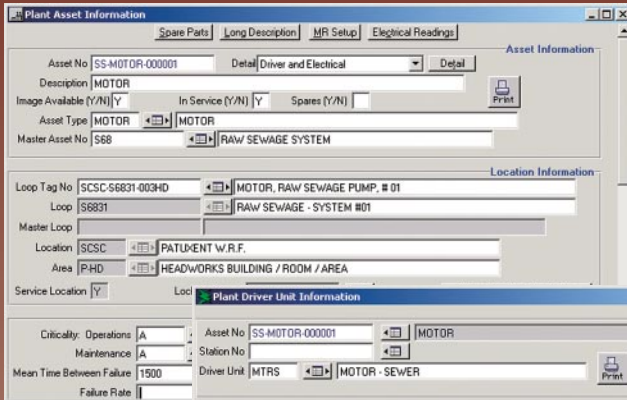
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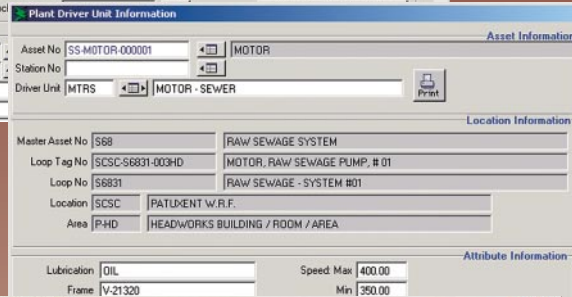
## PRODUCT FEATURES

# CASS WORKS®

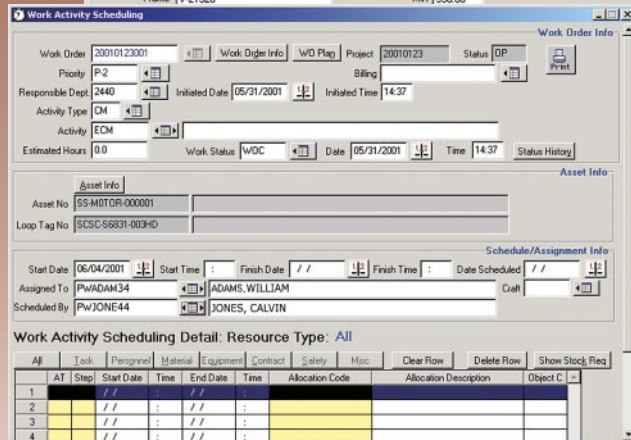
## Version 8



Plant Asset Information window showing fields for Asset No (SS-MOTOR-000001), Description (MOTOR), In Service (Y/N), Spares (Y/N), Asset Type (MOTOR), Master Asset No (S68), Loop Tag No (SCSC-S6831-003HD), Loop (S6831), Location (SCSC PATUKENT W.R.F.), Area (PHD HEADWORKS BUILDING / ROOM / AREA).

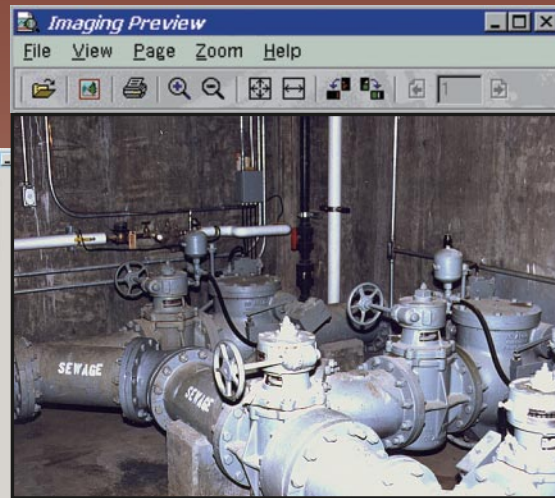


Plant Driver Unit Information window showing fields for Asset No (SS-MOTOR-000001), Station No, Driver Unit (MTRS MOTOR - SEWER), Master Asset No (S68), Loop Tag No (SCSC-S6831-003HD), Loop No (S6831), Location (SCSC PATUKENT W.R.F.), Area (PHD HEADWORKS BUILDING / ROOM / AREA).



Work Activity Scheduling window showing fields for Work Order (20010123001), Priority (P-2), Responsible Dept (2440), Activity Type (CM), Activity (ECM), Estimated Hours (0.0), Date (05/31/2001), Time (14:37), Asset Info (Asset No: SS-MOTOR-000001, Loop Tag No: SCSC-S6831-003HD), Schedule/Assignment Info (Start Date: 06/04/2001, Assigned To: FwADAM34, Scheduled By: FwJONE44).

All	Task	Personnel	Material	Equipment	Contract	Safety	Misc.	Clear Row	Delete Row	Show Stock Req
1	AT (Step)	Start Date	Time	End Date	Time	Allocation Code	Allocation Description	Object C		
2		//		//						
3		//		//						
4		//		//						



PLANT MAINTENANCE MANAGEMENT

## PLANT MAINTENANCE MANAGEMENT

**BUILDS** a complete inventory of assets by type, function, and process.

**PROVIDES** technicians with detailed component information - mechanical, electrical, and instrumentation.

**IDENTIFIES** associated spare parts and their availability.

**CATALOGS** lockout and tagout procedures and confined entry.

**SHOWS** past maintenance activities through Quick View pop-up windows.

**ALLOWS** scheduling, generating, and tracking of maintenance activities: preventive, predictive and unscheduled.

**MAINTAINS** a complete maintenance history including costs for individual assets and processes.

**OFFERS** flexible querying and reporting of maintenance and personnel accomplishments.

**PLANNING** and **SCHEDULING** tools allow effective scheduling of work based on available resources.

**FLEXIBLE IMPLEMENTATION** matches your facility's workflow and established work plans.

**CONNECTIVITY** to data through standard reports and third party reporting tools.



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# CASS WORKS®

Version 8

SEWER MAINTENANCE MANAGEMENT

The screenshots display the following components of the Cass Works software:

- Service Request (01)002 -- (01)001:** A form for entering request details such as Request No (00000113), Project No, Date (04/07/2001), Time (08:04), and Recorded By (2387 MILLER, WILLIAM).
- Customer Information:** Fields for Customer Name (MICHAEL FISHER), Customer ID (274-303-2121), Address (1055 SUNNYSLOPE TR), City (GLEN BURNIE), State (21061), and Phone No (420 222-1010).
- Quick Work Order Logout:** A summary of work order details including Work Order No (20010127001), Status (OP), Completed By (SWR0087 WILLIAMS, ANTHONY), Problem (SMHCDV SEWER - MANHOLE COVER COMPLAIN), and Action Taken (REPLACED UNDERSIZED COVER TO FIT FRAME).
- Table:** A table listing billing items with columns for Billing Dt, AT, Code, Description, Multi, Units, Rate, Cost, and WHS Code.
 

Billing Dt	AT	Code	Description	Multi	Units	Rate	Cost	WHS Code
04/10/2001	P	SWR0087	WILLIAMS, ANTHONY	2.5		\$23.15	\$57.88	
04/10/2001	E	1282	1/2 TON PICKUP	2.5		\$8.70	\$21.75	
- Work Order:** A detailed form for work order information, including VO No (20010127001), Act Type (SRPC), Date (04/10/2001), and a GIS map showing the location of the manhole cover issue.



## SEWER MAINTENANCE MANAGEMENT

**MAINTAINS** a network database of sanitary sewer structures, including manholes, mainlines, service connections, and pumping stations.

**PROVIDES** a means to automatically schedule, generate, and track both preventive and unscheduled maintenance work orders.

**ALLOWS** service requests to be tracked separately from work orders, allowing multiple requests to be tied to a single work order.

**RECORDS** complete history of all maintenance activities.

**ACCOUNTS** for maintenance costs including personnel, materials, equipment, and contractors.

**MANAGES** stockroom inventories of all parts, materials, and equipment.

**FACILITATES** both standard and ad hoc reporting.

**PROVIDES** dynamic linking of digital images (as-builts, schematics) to asset inventories, GIS and AM/FM.

**MANAGES** asset information for Capital Asset Management and GASB 34 reporting.

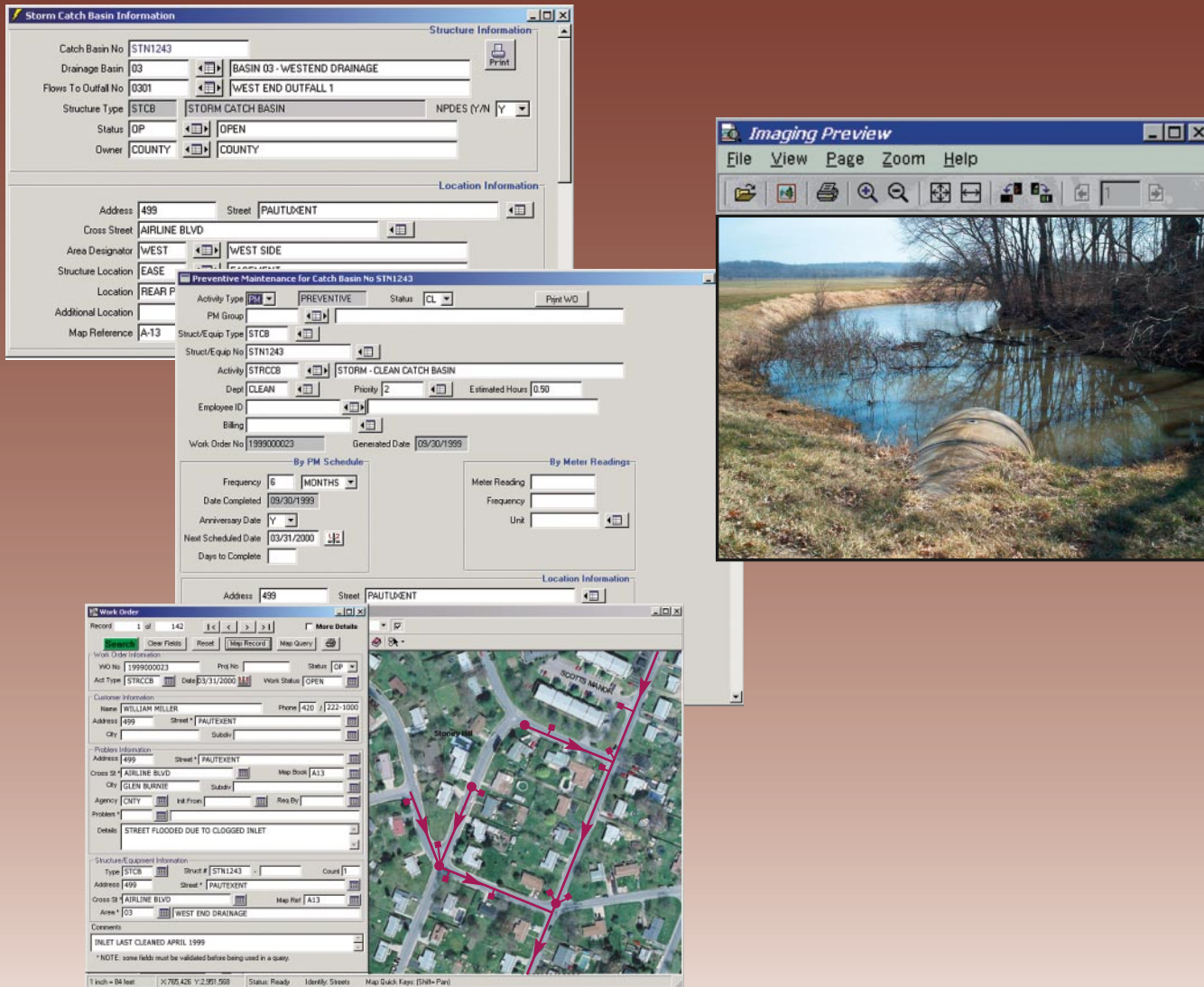


## PRODUCT FEATURES

# CASS WORKS®

## Version 8

STORM MAINTENANCE MANAGEMENT



## STORM MAINTENANCE MANAGEMENT

**MAINTAINS** a comprehensive network of drainage structures including inlets, catch basins, manholes, storm sewer inventories, and outfalls, wetlands, open drainage features.

**DYNAMICALLY** traces flow through open and closed drainage structure inventories.

**RECORDS** and tracks observations from open drainage inspections.

**COMPLIES** with NPDES Best Management Practices (BMP) through scheduling, generating, and tracking maintenance work orders.

**RECORDS** complete history of all maintenance activities and cost of personnel, materials and equipment.

**PROVIDES** both standard and ad hoc reporting.

**DYNAMIC** linking to GIS and AM/FM.

**MANAGES** asset information for Capital Asset Management and GASB 34 reporting.



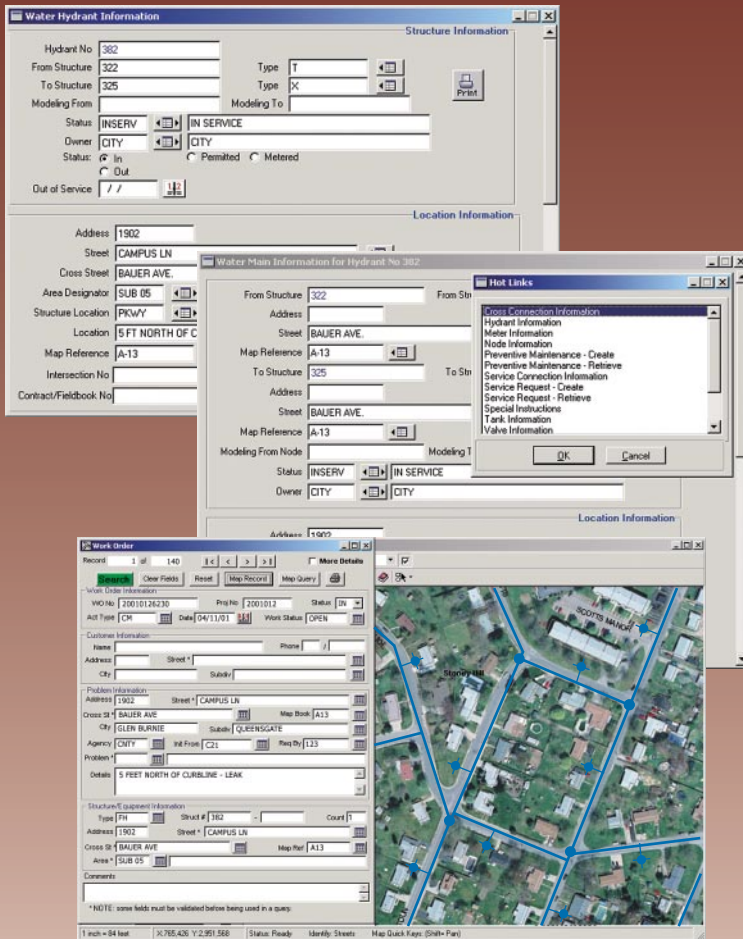
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## PRODUCT FEATURES

# CASS WORKS®

## Version 8



WATER MAINTENANCE MANAGEMENT

## WATER MAINTENANCE MANAGEMENT

**MAINTAINS** a comprehensive network of water distribution structures including mains, hydrants, valves, meters, backflow connectors, tanks and wells.

**ALLOWS** both preventive and unscheduled maintenance activities to be scheduled and tracked.

**CROSS REFERENCE** capabilities allow quick access to critical shutdown information.

**ISSUES** work orders using any user-specified combination of date range, structure type, maintenance category and priority.

**RECORD** multiple maintenance activities on a single work order with job logout prompts and performance measurements.

**PROVIDES** a complete history of all maintenance activities with hot links to inspection records.

**ACCOUNTS** for maintenance costs including personnel, materials, equipment, and contractors.

**MAINTAINS** stockroom inventories of all parts, materials, and equipment.

**FACILITATES** both standard and ad hoc reporting. Print maintenance task summaries for given period (weekly, monthly, quarterly or annually).

**PROVIDES** dynamic linking of digital images (as-builts, schematics) to asset inventories, work orders, GIS and AM/FM.

**WEB ENABLES** information through enterprise reporting tools.

**MANAGES** information for Capital Asset Management and GASB 34 reporting.

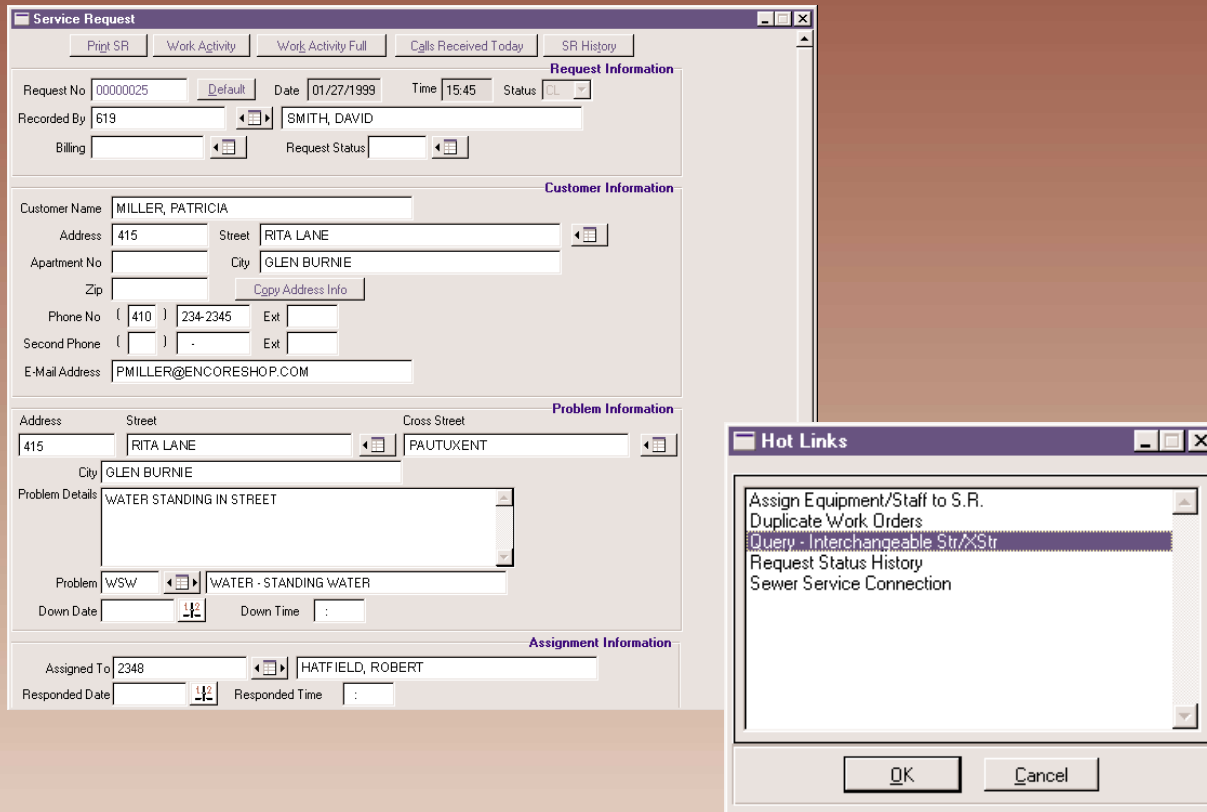


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# CASS WORKS®

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SERVICE REQUEST

## SERVICE REQUEST

**TRACKS** complaints using a “Service Request” form across all departments of an organization.

**ALLOWS** for viewing of in process complaints by multiple people at the same time.

**RECORDS** and tracks customers’ service request with preprogrammed queries for quick retrieval.

**TIES** customer complaints and service request to specific network structures

**DIRECTS** an automated link to work order.

**ASSIGNS** cost to a service request in place of work order.

**SERVES** as inspection form prior to work being assigned.

**SENDS OUT** an email response once complaint has been handled.

**PIN** map location of complaints through CASSView or other GIS integration tool.

**FACILITATES** both standard and ad hoc reporting. Can connect to third party reporting software.

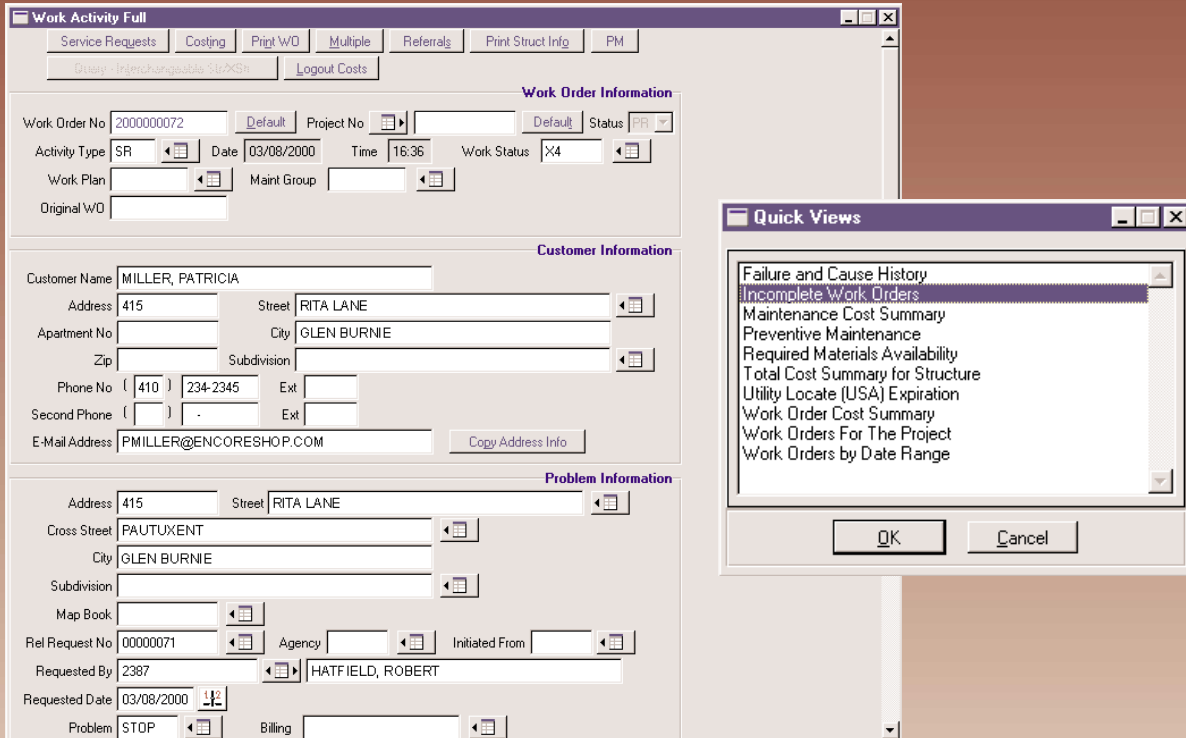
**TRACKS** source of complaints by type, cause, department, geographic locations and more.

**AUTOMATICALLY** checks other calls received from complaint location.



# CASS WORKS®

Version 8



WORK ORDER MANAGEMENT

## WORK ORDER MANAGEMENT

**GENERATES** work orders for both preventative and unscheduled work.

**TRACKS** work in process status.

**ACCOUNTS** for maintenance cost including personnel, materials, equipment, and contractors.

**ALLOWS** service request to be tracked separately from work orders, allowing multiple requests to be tied to a single work order.

**ACCOMPLISHES** project tracking by assigning a project number for all work orders in the project.

**KEEPS** a complete maintenance history allowing for analysis of asset performance.

**MAINTAINS** preventative maintenance activities such as yearly inspections and prints automatically when due.

**CREATES** displays and maps with color-coded locations for various classifications of work activities, type or failures using CASSView™ and other GIS integration tools.

**PRINTS** maintenance task summaries for a given period (annually, monthly, or weekly).

**PLANNING and SCHEDULING** tools allow effective scheduling of work, based on available resources.

**MAINTAINS** a complete maintenance history including cost for individual assets and processes.

**MANAGES** stockroom inventories of all parts, materials and equipment.

**FACILITATES** both standard ad hoc reporting. Can connect to third party reporting software.

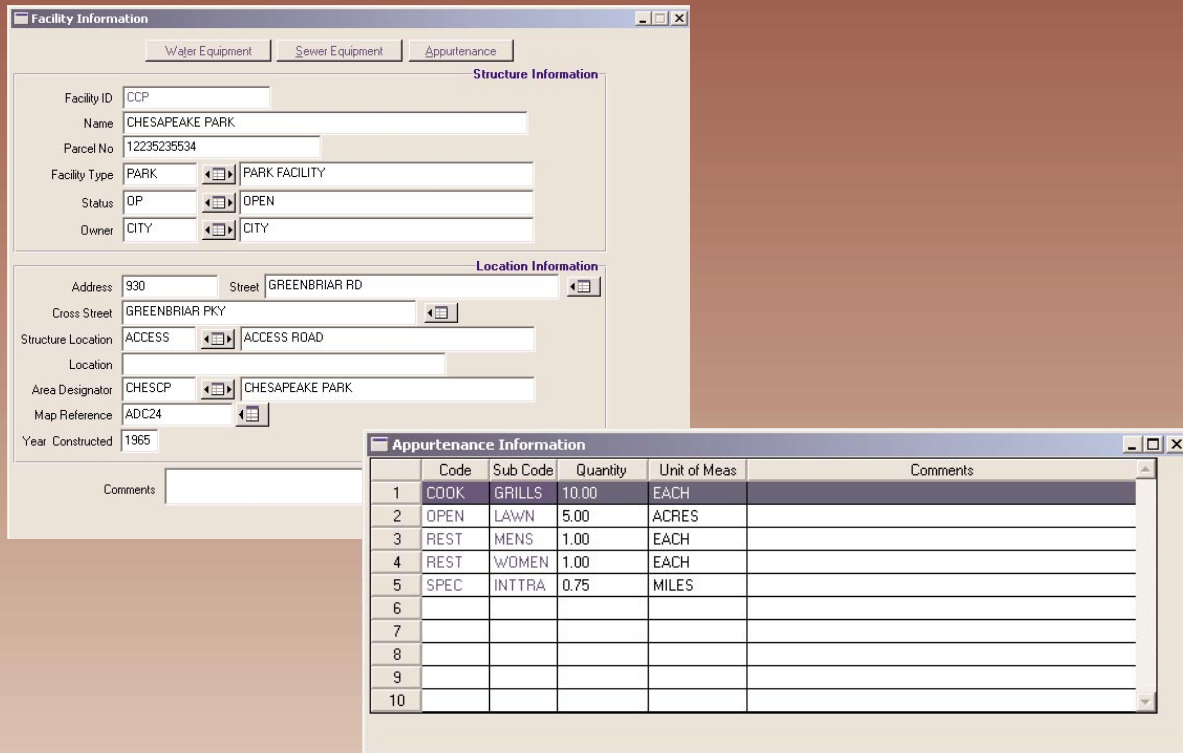
**PRINTS** work orders one at a time, in batch and to other locations.

**REFERS** work to other departments with the click of a mouse.



# CASS WORKS®

Version 8



FACILITIES MANAGEMENT

## FACILITIES MANAGEMENT

**MAINTAINS** a database of facility structures, including buildings, rooms, parks, and trees. Specific details of asset attributes and features are integrated with facilities maintenance management processes.

**PROVIDES** a means to schedule, generate, and track both preventive and unscheduled maintenance work orders. Support is provided in the form of completely integrated components including cost and resource allocations, asset and equipment informa-

tion, maintenance tasks and procedures, and work force processing and management.

**RECORDS** complete history of all maintenance activities by asset, activity, location, costs, determined failure causes, work measures, historical tracking of service calls, total cost of maintenance and maintenance trends.

**ACCOUNTS** for complete maintenance costing, including personnel, materials, equipment, and contractors.

**MANAGES** stockroom inventories of all parts, materials, and equipment, multiple warehouse locations. Rolling stock inventory, purchase order tracking, and stock evaluation are all functions provided in the module.

**FACILITATES** both standard and ad hoc reporting.

**DYNAMIC** linking to GIS and AM/FM.

