

MaintStar

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February 28, 2013

Ron Korman
Fleet and Facilities Manager
City of Sparks
431 Prater Way
Sparks, NV 89431

Dear Ron:

MaintStar understands the City of Sparks is seeking to embrace an enhanced technology platform that will help it to do what it does – only better, and more efficiently. As the City continues to grow it is especially important that this technological capability grows with you. After our meeting on February 20, 2013, it is clear that:

- 1.) Using the MaintStar System more powerfully and effectively, especially the Work Order capability is a top priority for your organization
- 2.) The Web Based MaintStar System would further your goals and objectives more robustly than the client/server version
- 3.) Since GIS is a vital component of your operational effectiveness, complete integration between your GIS effort and MaintStar is a vital part of this solution
- 4.) Wastewater Maintenance Management is a high priority
- 5.) A Web Based Work Request System for Internal Users, and possibly eventually External Users, would be a valuable component to incorporate into this proposed solution now, or added at a later date

Therefore, the following is our carefully considered recommendation and pricing proposal for providing this solution to the City of Sparks, Nevada.

Phase I

Web Based MaintStar System (Regularly \$49,500)	\$25,500
Installation	\$3,500
Email Configuration	-NC-
Annual Support	\$6,500
Sub Total	\$35,500

MaintStar values its long-standing relationship with the City of Sparks and is offering a substantial discount.

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Annual Support entitles you to as much help as you require via live telephone, or email, plus web meetings, if necessary. You will also receive all upgrades as part of this agreement.

Tying the installation of the Web Based MaintStar System with the Work Order “launch,” your ONSITE Training will focus not only on using the Work Order, but on Implementation as well, using the City’s own data. This should result in a much more meaningful and relevant learning experience.

Onsite Training/Implementation – Five Days (Expenses included)	\$12,750
Sub Total	\$12,750

Normally this training would not be a major factor in upgrading to the web version of MaintStar, since it has the exact same look and feel as the client server version. However, since you have decided to start using the Work Order capabilities of the System (the heart of the System) which will be totally new for you, training is definitely in order. Therefore, five days of intensive ONSITE Training for you and your team will include System Administration and End User sessions. Emphasis will also be placed on passing this knowledge on to others (Train the Trainer). Implementation will also be an integral part of this experience, especially since the MaintStar Trainer is also an Implementation Engineer. He will suggest and recommend possible ways to streamline your work flows and processes. Thus, the five days, as mentioned, will consist of both Implementation and Training.

Two instances will be installed: one for development and testing and one for actual production. Once installation is completed, tested and verified to be successful, everything will be moved to the production instance.

We will work with you to make sure everything is set up to reflect the way you do business, that is, according to your operations, work flows and processes. This is known as Set up Files and Configuration, and will be necessary in order to have the System work for you properly. You have not previously taken advantage of our expertise in this area.

Phase II

Wastewater Maintenance Management System (Regularly \$39,500)	\$29,500
Annual Support	\$6,500
Operational Assessment	\$3,500
Installation	-NC-
Files Configuration – complete	\$29,500
Data Conversion - complete	\$19,500
GIS Linkages	\$6,500
Project Management	\$8,000
Sub Total	\$63,500

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Phase III

GIS (Integration and Implementation)	\$29,500
Annual Support	\$6,500
Sub Total	\$36,000

This is a one-time GIS Integration/Implementation and will be in place for all subsequent specialized Modules.

Phase IV

Web Based Work Request (Internal and/or External Users)	\$29,500
Installation	-NC-
Annual Support	\$6,500
Sub Total	\$36,000

Not only will moving to the web version be more advantageous from an Information Services standpoint (Installation and upgrades will only need to be performed on one computer), but it will provide the ability for your maintenance workers to use laptops and other mobile devices in the field, etc.

MaintStar will work with the City to make sure the installation is successfully completed and everything is implemented properly. Our Technical Support Engineer, Alan Buth, estimates that it should take about a half day to get you fully operational with your new Web Version. Thereafter, the Wastewater Module will probably take a similar amount of time and effort.

Set up Files and Configuration and Data Conversion will probably take quite a bit of time and effort, but it will definitely be worth it in the long run. Again, we will work closely with you to accomplish all this. This process, however, can be significantly expedited by integrating with your GIS Geodatabase.

We will manage this entire Project for you and with you.

Sincerely,

Louis J. Tonetti
National Sales Manager

City of Sparks/MaintStar Plan

I. MAINTSTAR PROJECT MANAGEMENT SERVICES

MaintStar will provide the City of Sparks with a dedicated team of professionals who will focus on setting up, implementing, and training on the MaintStar System to ensure that completely successful operational status is brought about smoothly and efficiently. The MaintStar Project Manager will provide (but is not limited to) the following services:

- A single source of contact for all project issues from beginning through Implementation
- Management of an Implementation Plan, which will document all project goals, objectives, and milestones
- Guidance and support for both MaintStar and City Project staff
- Resolution of any scheduling or communication problems that may arise between MaintStar and the City
- Responsibility for all deliverables and customization as required by the City and agreed upon by MaintStar
- Management, from the onset to completion, of all aspects of the Project, including overseeing MaintStar personnel at each step along the way
- Testing, Implementation, and Support Responsibility for addressing all performance problems which might occur during this Project

Meetings will be scheduled during this phase to help ensure the success of the Project. All resources of MaintStar will be available, including Technical Support, Consultation, and Training, to name a few.

It is important to place the MaintStar System into the hands of the Project team as quickly as possible. This enables a timely, smooth Installation and Implementation process. Once the system is installed, the Project team will begin training, and MaintStar will set up a sample database to facilitate the team's knowledge of the System. Full training will be provided upon configuration and once approval has been given for full testing.

All stages from Installation through Implementation will be reviewed and tested to ensure that the City will receive a trouble free System that will be extremely comprehensive, but very **user friendly**.

Acceptance of the MaintStar System will be accomplished via a detailed Testing Plan jointly developed with the City. Testing procedures will be outlined and criteria will be defined to demonstrate the System is operating properly and to the City's complete satisfaction. All configurations will be performed, with any appropriate interfaces in place. Final System testing will take place "under load." Functionality and performance will be fine-tuned, and final approval will be signed by MaintStar and by City of Sparks.

After following the logical and practical Installation and Implementation steps detailed above, it will then be time to "turn the keys over to the City." The transition will be a

smooth one, and your staff will be well trained on a System that is very **user friendly**. They will get quick and clear answers to any questions that may arise at the “Go-Live” testing time, or at any time afterwards from our expert Technical Support staff. You will probably have spoken with them or worked with them already during the Installation and Implementation process. They will be familiar with your system installation, and be ready to assist with your technical and application questions.

MaintStar warrants that all software under this contract will be free from defects and suitable for the use intended for a period of three years from the date of acceptance of the System by the City of Sparks.

Estimated Hours/Resources

Both MaintStar and the City will bring resources to manage this project.

From MaintStar: Project manager estimated time requirement	500 hours
Data Conversion Engineer	57 hours
Programming Support	70 hours
Installation Engineer -	40 hours
System testing -	24 hours
Training -	40 hours
Follow up support	120 hours
TOTAL	851 hours

From Sparks: Project manager estimated time requirement	300 hours
IT Staff	60 hours
Team members	100 hours
Conference Room space with projector	40 hours
TOTAL	500 hours

A project of this scope will undoubtedly require some modifications as it proceeds. However, a foundation of effective and timely communication developed early in the process is absolutely essential to the overall success of the entire effort. MaintStar Project Managers and the skilled Implementation Team have a long and successful record of providing Implementation services for our software system, and therefore will be leading and guiding the Sparks staff members through the steps and stages of the process. We have found through our 29 years of experience that the most successful project implementations have certain traits in common: strong leadership and a commitment for success.

II. SCOPE OF SERVICES

MaintStar is proposing its completely web based, GIS integrated Work Order, Asset Management System to City of Sparks in order to support its Public Works Department operations involving: storm water, facilities, streets, water, sewer, fleet and parks.

Through the use of its specialized modules MaintStar will make it easy for City of Sparks to manage all its infrastructure assets involving fresh water, storm water, wastewater, streets/transportation, and parks.

MaintStar also is proposing to include its web based Work Request System which will allow team members to interact with all City department operations and to handle inquiries and complaints from both Internal and External Users. Work Requests can easily be turned into Work Orders and automatically routed to the appropriate operational area. When a Work Request (inquiry or complaint) is received the System can automatically provide email notification to the requestor. When the Work Request is turned into a Work Order, the requestor will receive an additional email notification. Finally, when the work is completed, the requestor will again be notified. If desired, a survey can be presented which can be used to evaluate the quality of work performed. This survey can consist of up to ten questions custom designed by City Staff. Rating rankings will be compiled by the System and multiple reports can subsequently be generated from across all departments.

Several standard Work Order Reports are included, plus the Custom Report Writer ("Query") which allows for the creation of custom reports "on the fly." No computer programming experience is required to generate these custom reports. These reports can also be exported in a number of different formats, and where appropriate results can be mapped via ArcGIS.

In order to produce the look and feel desired by the City, the MaintStar System allows users to configure and customize all screens and reports, all without requiring any programming experience at all, and without having to burden already overworked IT staff. All customization work carries through with future updates.

The flexibility of the System allows it to adapt to the City's workflows and processes, instead of the other way around. The Setup Files and Configuration effort is extensive, but not difficult. MaintStar will work closely with City staff to make sure all work flows and processes are set up completely and accurately. Once this investment is made, the System should run smoothly and efficiently and very easily.

The MaintStar System is a suite of software modules that serve a broad range of operational and administrative requirements for managing various municipal infrastructure assets. Therefore, MaintStar is a "one stop solution" which meets all your asset management needs for facilities, fleet, streets, signs, signals, wastewater, storm

drains, freshwater plants, water distribution, parks, landscape, etc. Our Parks & Recreation Maintenance Management Module will likely be of particular interest to the City for managing its tree inventory.

The Emergency Response Management Module is also included. This will help manage situations that require involvement across different City departments, especially in an emergency condition such as a Combined Sewer Overflow or a Sanitary Sewer Overflow.

The MaintStar solution will record Work Orders, capture costs, and schedule Inspections and Preventive Maintenance (PM) services. It will also help your compliance with **GASB 34**. The system will maintain an inventory of parts and materials, track budgets and track service requests generated from your internal staff, as well as from the general public.

Choosing an integrated system with this wealth of functionality will leverage the City's investment and open up additional opportunities for greater utilization by all departments. Great functionality is great, but it must be easy to use. MaintStar is famous for being **easy to use**.

MaintStar's customization capabilities are quite extensive. Our users can customize virtually any system screen without needing any computer programming experience, or without having to incur any additional programming expense. The ability for a user to customize system screens has been a hallmark of the MaintStar system since 1984. We are also proud that we have been able to incorporate user customization into the new web-based system. (They told us it was impossible to do this with a web-based system, but we did it anyway). You will not find any other solution having self-customization features equal to those of MaintStar. This easy self-customization capability is an important plus for you since it will eliminate future custom programming costs. It will also eliminate future potential for bugs, upgrade headaches and other costs. Customization carries through with all upgrades and doesn't have to be redone.

Upgrades are handled remotely. MaintStar will notify the City in advance of an upgrade, and then schedule a convenient time to perform the upgrade. We will work closely with your IT staff to make sure everything is installed properly and thoroughly tested. This is all included with our Annual Support.

Since the MaintStar System is modular, the City can easily expand its scope of services if its needs and requirements grow beyond the original configuration.

Finally, with MaintStar you will enjoy full integration with ESRI's GIS systems. MaintStar enables bi-directional capabilities with ArcGIS and other ESRI products. Work Orders and Inspections can be created directly from a map, and complete asset information and history can also be displayed.

III. IMPLEMENTATION, WORK PLAN and TIMELINE

MaintStar understands the City of Sparks' requirements and intends to provide a state-of-the-art Web Based Work Order & Asset Management System. The System will accommodate Work Service Requests, Preventive Maintenance scheduling and operations, and Inventory Management Control, among other capabilities. Labor, equipment, and material cost tracking is automatically managed by the Work Order, which is the heart of the MaintStar System.

MaintStar's approach in providing its System to Sparks is in 9 phases:

1. Consultative discussions to review and confirm the City's processes
2. Strategizing proper Setup procedures
3. Data Conversion (Usually here, but at a later date if the City decides)
4. Implementation using the City's own data as real time input
5. Training of System Admin personnel
6. Training of End User personnel
7. System Testing and Acceptance
8. Ongoing support via phone and email
9. Follow-up training as necessary

After acquiring an intimate understanding of the City's workflow and processes, MaintStar's biggest area of concern will be the Setup, which is extremely vital to the success of this project. MaintStar's Setup is quite comprehensive, but not difficult, and if done properly and in a timely manner, the new System will practically run itself afterwards. As a rough rule of thumb, the more extensive the Setup is, the higher the quality of the System.

MaintStar will be using the City's own data to train all personnel, which should result in a much more meaningful and effective Implementation and Training experience.

Our approach also requires a strong, professional City of Sparks Project Manager who will take ownership of the effort, who has authority, and who can help drive the entire process in cooperation with MaintStar's staff of dedicated professionals. Without these key ingredients, a proper Setup and a strong City Project Manager, the likelihood of the Project's success will not be as great.

Completion of this project within the City's required time frame will be directly dependent upon the degree and timeliness of the cooperation MaintStar receives. We will accomplish every goal and objective on time and in time, as long as Sparks does its part on time and in time. To this end, MaintStar will guide City personnel every step along the way.

MaintStar's 29 years' experience will help to drive the success of this Project. MaintStar not only develops the software, but also Installs, Implements, Trains and Supports the System as well. City of Sparks will be looking to MaintStar as the expert, and MaintStar will strive to demonstrate that this trust is well placed.

Past performance proves that setting forth clear cut expectations and how to achieve them is by far the best course to follow. Sparks and MaintStar will jointly develop a detailed Scope of Work document which will also specify time lines for achieving all goals and objectives. Although each party's role will be defined explicitly, there will probably be a certain amount of "fine-tuning" along the way; however, open, clear and accurate communication between Sparks and MaintStar will ensure that everyone stays on the track to success. Clarity of purpose and expectations trumps the ambiguities of empty promises - every day of the week.

Because the MaintStar System is very flexible, the focus will be on making it adapt to the way City of Sparks does business, not the other way around. MaintStar will require constant input from the City in order to understand the work flows and processes that need to be set up in the new System. MaintStar will make recommendations and suggestions based on observed best practices while guiding the Project every step of the way.

There will be documented standards of performance and quality, with deliverables and milestones clearly set forth. The Project Managers from both parties will be working closely together helping to make sure these obligations are met.

Primary Areas we will address and establish:

Work Orders

- Manage open, update, complete and close activities
- Include costs for labor, material, parts, equipment, vehicles, tools and outside resources
- Include asset ID on work order to create history
- Attach to service requests to provide lifecycle history of problems
- Route work orders to the field crews
- Schedule work to be done on a calendar that allows the user to change the day, time or crew by activating the work order from the calendar view
- Link several assets to a single work order

Service Requests/Customer Service

- Create a service request for internal and external work requests
- Connect service request to subsequent work order to provide ability to update original requestor

Asset Register

- Include vertical and horizontal assets
- Include asset characteristics and name plate data as required
- Allow the creation of asset hierarchies
- Ensure that each asset has a unique ID
- Attach images and documents to an asset record

Preventive Maintenance (PM)

- Set up PMs by various criteria such as by date, hours, readings or miles

- Include appropriate labor, materials, parts and other requirement work components
- Set various PM start date types, e.g. days, weeks, months, etc.

Inventory/Parts

- Designate any area or vehicle as a store room or warehouse
- Include vendor and manufacturer information with a part
- Lower stock on hand figure based on use through a work order
- Allow parts to be transferred between storage areas
- Store manufacturer and vendor history
- Assign bin location in a warehouse
- Inform user when minimum parts level is reached

Asset Inspections

- Store information and images about various asset inspections
- Apply a condition assessment rating to an inspection found defect
- Create a condition rating report

Reports and Key Performance Indicators (KPI)

- Allow users to create ad hoc reports
- Store ad hoc report queries and change as required
- Review all reports before they are printed
- Include pre-defined general system reports that can be customized by the user
- Create and update key performance indicators (KPIs)
- Send reports to printer, file or email
- Provide compatible file formats for exporting reports

Workflow Management

- Store and use business process workflows
- Support rules based workflow routing
- Create document packages such as work orders, maps, special instructions, safety instructions and other for routing and approval

The MaintStar System is completely and easily customizable. Every screen and report is able to reflect the exact work flows and processes of the Owner. No programming experience is needed or required in order to perform customization. Every field on every screen can be named anyway the City requires. Fields can be added or removed.

IV. PROJECT IMPLEMENTATION SCHEDULE

The following is a proposed work plan for Implementation of the City's new, expanded MaintStar System. A project of this scope will undoubtedly require modifications at times; therefore, as already mentioned it is essential that a foundation of effective communication be developed early in the process.

It bears repeating that there needs to be a Project Manager from the City, as well as a Project Manager from MaintStar. Since this Sparks Project Manager will be the primary point of contact he or she should be an individual with a strong vision for the project, and a keen sense of commitment for its success. This individual should command enough authority to make day-to-day decisions as issues arise, with only minimal need for formal approval authority from other management levels.

MaintStar's Project Schedule for the City will be as follows:

A. Kick off Meeting

The MaintStar Project Manager will conduct a kick off meeting with City staff to address the following items:

- Review of the project's scope and its deliverables. A discussion will be held with the IT staff to address the following topics: tentative schedule for installation of the MaintStar software on the server; software licensing issues; and system administrative training
- Setup Files and configuration data loading into the MaintStar system

MaintStar will conduct a classroom-style presentation for the entire implementation team to expose them to the general capabilities of the software, and to initiate development of specific user-defined codes and unique system configurations.

B. Hardware/Software Installation & Configuration

The MaintStar technical crew and the City IT Staff will conduct the installation jointly. IT personnel will need to accompany MaintStar staff members throughout all installation processes. City IT personnel will need to have administrative rights and passwords available in order for the MaintStar technical team to complete the installation on City hardware. MaintStar Technical staff will be training City IT staff in all installation and upgrade procedures at this time.

MaintStar will create 2 MS SQL Server database instances: One will be a development environment used for testing and training; the second will be the live database for actual use. Databases will be installed on a corporate server with workstation and Internet access.

E-mail Work Request configuration will be established. MaintStar technical staff will configure the e-mail interface. We strongly suggest Outlook or Exchange. Then profiles will be created and e-mail integration will be tested.

The Web Service will be installed. Installations will be tested for connectivity and functionality. System manuals and other documentation will be delivered at this time.

Development and live environments are now ready.

C. System Configuration

The MaintStar Project Manager will analyze City business processes and procedures in order to understand what is done and how it is done. How does work get initiated? How does it progress? What happens when it is completed? Armed with this knowledge MaintStar will then conduct a detailed review of all the City configuration Setup files in order to optimize the ease of day-to-day data input, as well as to facilitate the generation of daily, monthly, quarterly, and annual reports.

The following is just a small sample of the data structure that will be defined:

1. Cost Centers
2. Asset ID system
3. Asset Types
4. PM tasks, Templates coding
5. PM Scheduling
6. Failure Codes
7. Location Codes
8. Sub Location Codes
9. Account Codes
10. Craftsman Data
11. Vendors and Contractors
12. Inventory Parts and Materials
13. Work in progress coding
14. Work orders types
15. Priority Codes
16. Custom screens layouts

As part of this Setup Files Configuration, MaintStar will help make all information usable by the System without the necessity for City staff to manually key in this data. In other words, we will analyze the data sources that exist and convert as much data as possible to the MaintStar System format.

Determination will then be made regarding how to populate data most effectively to existing MaintStar fields and how to name the rich supply of **User Definable Fields**. We will then draft a data flow document that will detail the workflow and business rules that will affect the system configuration. All parties will be required to sign this document for acceptance.

D. Work Order Configuration

MaintStar will conduct a brief overview of the Work Order entry screens to familiarize you with their functions. We will then define the Work Order fields, field names, and intended usage.

- MaintStar will configure Work Tasks and associated hours
- MaintStar will rename the User Definable Fields
- MaintStar will configure the automatic messaging features
- MaintStar will set up Work Status and Failure Codes
- MaintStar will help customize screen layout and colorize fields for entry coding

Once the Work Order screens are defined, all parties will be required to signal approval by signing a Work Order Configuration Document.

E. Data Conversion Routines and Code Development

The MaintStar Project Manager will meet with City staff and IT Managers to review the existing data sources. We will need to develop a clear understanding of what data is contained, and how it is structured and used. We will need to have a copy of this data in Excel or ASCII format. Or, it can be made available via the City's geodatabase.

From this basis of understanding, we will explore with Sparks the various fields in the MaintStar System that relate to the fields in the existing data sources. The MaintStar System is very flexible and also has hundreds of User Definable Fields that can be utilized for various purposes. We will discuss with you the various options, and we will reach a mutual agreement as to the most effective fields for data positioning.

We will define the overall structure of the System, and create the necessary mapping linkage logic for the importation of the data. When this data mapping structure has been defined, we will develop a Data Conversion Document detailing the conversion program. This document will identify the source data fields that will be extracted from the existing data sources, and will associate these fields with the MaintStar software data fields to be populated. Actual conversion of the existing data sources will be done at the MaintStar home office. Technical staff members, who have conducted dozens of data conversion projects, will administer the process.

The conversion process will be done in 3 or more stages.

The initial stage will be a test conversion with a small sampling of data. This test conversion will be sent to you for inspection and discussion. It has been our experience that the initial conversion test will raise some issues, and clarify others. This therefore will result in a revision of the Importation Plan.

A second stage of testing will be done to the data under the new plan. This may prove to be a perfect fit, or may raise additional issues and require another adjustment.

Once consensus is reached, the final conversion will be performed with the full database.

F. City of Sparks' Responsibilities

Specific responsibilities of the City related to Implementation and data population efforts include the following:

- Researching and compiling existing electronic data sources
- Providing this data to MaintStar
- Scheduling staff time for review of converted data
- Being available to MaintStar Support Staff via telephone or e-mail regarding data conversion

G. Interfaces with Legacy Systems

Developing Interfaces with other software systems is an important way to minimize data input time and error, and MaintStar excels at creating such data exchanges. Currently almost every installation and implementation of the MaintStar System involves some type of data integration, or transfer.

At this stage of system implementation we will discuss in detail other software systems you are using, and determine the functionalities you may wish to integrate with maintenance data within MaintStar. We will then determine what data from those other systems you will use to update MaintStar's records; and conversely, what MaintStar generated data could be used to update the tables of your other systems, such as your accounting program.

Once agreement is reached, **including pricing**, we will define and map the interface parameters. A Data Interface Document will be created clearly defining the specific interface functionality and data exchange capability. All parties will sign this document for approval.

Next, our programming staff will need detailed information from your IT department about your various applications and their data structure. Our programming staff will need a sample of the data tables to work with and will then work to develop and test the agreed upon interfaces to your existing systems.

In other words, MaintStar will create the appropriate transfer processes to make it all happen efficiently. Then the data routines will be tested and refined until performance is determined to be correct and reliable. The full system will then be tested under load.

This development will take place at our offices in California, in order to move the project forward in the most cost effective manner possible. The rest of our implementation team will continue with other aspects of your System configuration.

H. Preventive Maintenance Setup

Once the basic set up data has been imported, we can begin the creation of the Preventative Maintenance (PM) Schedule. The MaintStar Project Manager or MaintStar

Trainer will work directly with the City's Maintenance Supervisor to create a sampling of PM scheduling. MaintStar will:

- Create templates of various service procedures to be done at various meter/calendar intervals
- Discuss how to assign maintenance staff, parts and contractors to the PM
- Show how these templates will then be linked to the appropriate assets to be scheduled

Sample schedules will be produced and signed for approval. MaintStar will then train your staff in the daily processing of the scheduled services.

I. Inventory Set Up

We will work with you to define Inventory coding and entry criteria. Determination will be made for the following areas:

- Open or Closed Inventory
- Stock ID Structure
- Model Numbering
- Warehouse Locations
- Sub Locations
- Parts Classes
- Vendor Identification
- Alternate Vendor Notation
- Minimum and Maximum Quantities
- Parts Quantity Updating
- Receiving Transactions
- Issuing Transactions

If Inventory Stock data exists in electronic format, we can probably import it for you at this time.

J. Training

We train your personnel onsite using a test database of your own data. As we train your primary staff we will focus not only on their own understanding, but how to pass this knowledge on to others. We will note areas to emphasize and also how to explain certain functions very clearly.

We recommend dividing the staff into specific user groups that share similar needs regarding System access and functionality. The training will be tailored to meet the specific needs of the respective user groups. Depending on a user's placement into specific groups, an individual user may be attending one or more sessions.

The MaintStar Project Manager will provide training sessions for foreman and operational staff. These sessions can be hands-on workshops, or very casual sessions at various work area locations. We will cover Work Orders, PM scheduling, Inspections,

and others. We will cover billing and information analysis, pre-built reports and custom reports. We will jointly determine these training session times.

Through this training every effort will be made to familiarize the City's personnel completely with the System's features and capabilities. Maximum beneficial usage of the System by the City is the goal. An experienced trainer will be provided who will have the responsibility for making sure the end users are:

- Knowledgeable in System functionality relative to daily assignments
- Knowledgeable in standard and customized report capabilities (where appropriate)
- Equipped with hands-on experience during the training process
- Equipped with personalized one-on-one training in any specific area as needed

Sparks is responsible for providing the following related to these training sessions:

- Scheduling and preparing facilities for software training sessions and presentations, as well as scheduling appropriate staff to attend these sessions. These sessions will include System Administration training and End User training
- Providing a projector and other necessary equipment for these sessions, including enough computers with network access for each student, depending on the class size

K. MaintStar's Annual Support provides three services:

- Ongoing support for technical issues
- Support for application usage questions after system training
- Annual updates to the system, with further added features functionality and support for new network, server and operating systems

The MaintStar support staff is an exceptional team of technicians who are all available by phone or e-mail to help you with any MaintStar related issues. They have extensive experience with the System and have been actively involved with our programmers in all phases of development.

Over 90% of our support issues are handled with the first phone call. Our regular support hours are from 6:00AM to 3:00PM Pacific, Monday through Friday.

The support staff also uses remote control web services to connect to your desktop when necessary. This tool allows us to show you our desktop on your computer in order to demonstrate a function. Or, reversing the process allows us to see your system screen, which is important when we need to look at your data to diagnose a problem in "real time."

You will find the support you receive for your investment in the new System is valuable, reliable and readily available. MaintStar wants to help keep your operation running successfully and smoothly.

Final System testing will now take place under load. Functionality and performance will be fine-tuned, and final approval will be signed off. After following the logical and practical installation and implementation steps detailed above, it will then be time to “turn the keys over to the City of Sparks.”

The transition will be a smooth one, and your staff will be well trained on a System that is very user friendly. Your staff will get quick and clear answers to any questions that may arise at the “Go-Live” testing time, or at any time afterwards from our expert technical support staff. You will probably have spoken with them or worked with them already during the installation and implementation process. They will be familiar with your system installation, and be ready to assist with your technical and application questions.

L. Testing and Acceptance

MaintStar will fully test and verify every installed module and software component. MaintStar will thoroughly test and regression test additional Modules and/or software components that are subsequently installed, in conjunction with previously installed and tested components. Final System testing will take place and the functionality and performance tuned for final approval by the Sparks Project Manager.

Once MaintStar has certified that the System is fully functional, working properly, and meets all established requirements, the City will perform acceptance tests for the purpose of determining that the licensed software performs in accordance with Sparks’ requirements.

If the licensed software including newly developed software or interfaces performs the acceptance tests, the City shall notify MaintStar and the date of notification shall be the acceptance date. The Project will be considered complete and accepted when the following occur:

- The System is fully implemented with all “in scope” departments online
- The Project Team meets for a final recap of accomplishments and Project finalization
- The Sparks Project Manager will then approve acceptance of all deliverables

Acceptance is predicated upon demonstrating and verifying that all System Modules and components are successfully working to the City’s satisfaction. MaintStar will work closely with the City to ensure acceptance.

M. Communication Plan

- Project management will be defined for both teams
 - MaintStar:
 - Dimitry Poretsky, Project Manager
 - David McElroy, Head Trainer, Implementation Engineer
 - Brett Kolve, Programmer

- Long Nguyen, Technical Support, Data Conversion Specialist
 - Victor Reinhart, Programmer, GIS Specialist
 - Louis Tonetti, National Sales Manager
- Sparks:
 - Project Manager
 - Wastewater Lead
 - Technical Lead
- Meetings will be conducted on a fixed weekly schedule
- Ad-Hoc meetings will be scheduled as needed
- Meeting agendas will be developed by Project Managers jointly
- Any and all electronic communications must and will always copy both Project Managers
- Agendas will include the list of participants for the current and next meeting to facilitate scheduling
- Meeting notes will be recorded and published by either Sparks' Project Manager or MaintStar's Project Manager
- All decisions will be documented
- Meeting notes will include action items for the next meeting, and responsible parties
- MaintStar will provide status reports bi-weekly
- Project schedule will be reviewed at each meeting, and adjusted as the project progresses
- Go-to-meeting will be used to link team members together for meetings
- On site meetings can be scheduled on as-needed basis

Change Management Plan

1. Change Order initiated by customer
2. Specific functional requirements discussed
3. Specific functional requirements specified and defined
4. (Examples include: additional logic, interfaces, and special customizations)
5. Change Order submitted in writing
6. MaintStar provides price estimate and time frame for delivery
7. Change Order specifics approved by customer
8. Purchase Order issued by customer
9. Down payment (% mutually agreed upon) required in order to initiate the change
10. Change Order then included in the Project Schedule for a mutually-agreed upon time period for completion

11. Change Order designed, developed and implemented by MaintStar
12. Internal testing and validation by MaintStar
13. Testing and acceptance by customer
14. Final payment

MaintStar generally invoices upon successful:

- 1.) Installation of the software and its testing
- 2.) Setup files and configuration
- 3.) Training
- 4.) Final testing and acceptance

The billing schedule will follow the general milestones listed above. MaintStar will invoice the City upon successful accomplishment of each milestone, and expects that each of the four major milestones listed above will trigger a 25% payment in the form of a check to MaintStar.

MaintStar will provide the following software and services to the City of Sparks in accordance with its requirements and specifications.

Web Based MaintStar System
Mobile Capability
Work Request (Internal and External)
Wastewater Maintenance Management

a) Installation
Complete Installation, Testing, and Regression Testing

b) Implementation
Setup Files Configuration

c) Training
System Administration
Power User
End User
Train the Trainer Approach

d) Annual Support
Unlimited Technical Support
Upgrades

MaintStar Sewer Management Module

Managing your Operation is easier than ever!



Part of the MaintStar System

MaintStar is a comprehensive solution for any City or Municipality. The Sewer Management Module is one of 30 modules available to meet a variety of needs.



- **Identify and record Sewer Assets:** Dedicated screens and tables for every major asset type; a place to record every important attribute of your assets. In addition to the standard fields, MaintStar provides over 100 additional user defined fields for each asset.
- **Track your work:** Easy entry work orders record what assets were serviced, what were the problems, and what actions were taken to correct the problems. The work order captures who did the work, and the resulting cost. When you use parts and materials on the work order, your inventory count will adjust automatically.
- **Pre-plan your services:** Pm scheduling built in to schedule routine services.
- **Record your inspections:** The system has dedicated inspection screens to record conditions and measurements from your observations or from TV inspections.
- **GIS system integration:** Work with your assets visually.
- **Operations information** available in easy to analyze reports

Sewer Assets Inventory

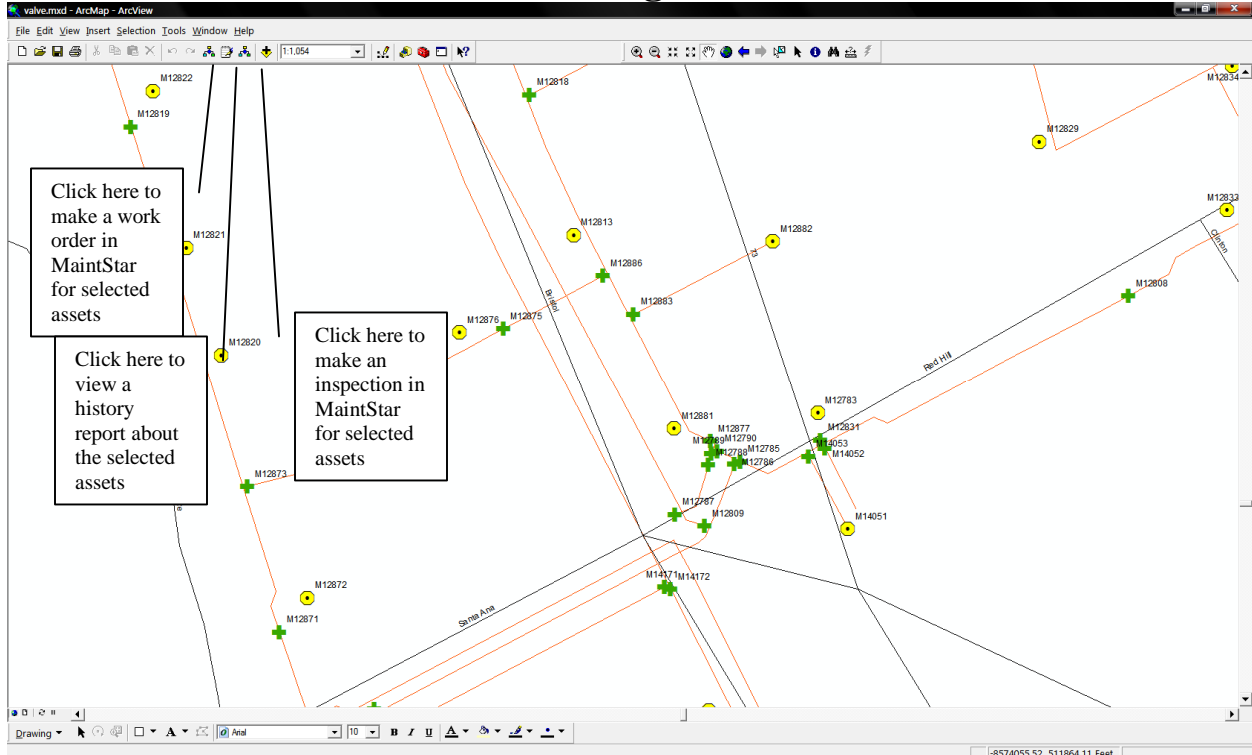
Screens designed specifically for:

- Main Lines
- Man Holes
- Service Laterals
- Lift Stations
- Grease Traps
- Pumps
- Facilities

In addition to the specific asset inventory screens listed above, the system has a “generic asset” entry. This is a flexible, configurable entry category that will allow you to create unlimited number of asset types. There is *no limit* to the number of new categories you can create, or number of asset entries for each category.

A Sample of a Main Line Screen:

GIS Integration



Sewer Assets shown on a G.I.S. Map

Information is easier to understand when we can see it graphically. This is why the “**G**eographic **I**nformation **S**ystems”, referred to as “GIS” are being developed by municipalities everywhere.

The MaintStar Sewer Module will fully integrate with your GIS System. When new assets are added to your GIS tables they will automatically be added to the MaintStar records. The system works bi-directionally to keep your MaintStar and your G.I.S. databases in-sync.

There are many ways the MaintStar/GIS integration will be helpful to you:

- You can select an asset from a work order, and see it identified in the GIS map.
- You can select multiple assets by circling an area in the GIS map. You can create a new work order in MaintStar with just a click all the selected assets will automatically be entered on the work order.
- Inspections can be created in the same easy way.
- You can view the entire history of work performed by clicking on any asset, or group of assets in the GIS map.
- You can use the MaintStar built-in Custom Report Writer to create your own queries and view your results on the GIS map.

Create TV Inspections and Regular Inspections

An inspection is a way to make a record of observations, measurements, or other conditions about the various items your department maintains and services.

MaintStar Sewer Management Module will allow you to integrate with WinCan, Granite Xp and other TV inspection systems to record your inspection information.

You can set up inspection intervals for a pre-determined group of assets and MaintStar will notify you when the inspections are due.

- Main Line TV Inspections
- Man Hole Inspection
- Lift Station Inspection
- Grease Trap Inspection
- Pump Inspections

The screenshot displays the 'TV Inspection' window in the MaintStar Sewer Management Menu. The interface includes a menu bar, a toolbar, and a main form area. The form is divided into several sections: 'Inspection' (with tabs for 'Inspection', 'Labor/Equipments/Contractors', and 'U.D.F.'), 'Mainline ID' (X3M0144_3M0188), 'Material' (RCP), 'Street' (ELM), 'Main Line Type', 'Last Inspected' (3/23/2005), 'Project No.', 'NPDES Permit', and 'Block No.'. The 'Inspection' section contains fields for 'Insp#' (UN00000036), 'Inspected' (11/05/07 12:26), 'Target' (11/21/07 12:26), 'Closed' (00/00/00 00:00), 'Elapsed Hr', 'Inspector' (D109 Victor Reinhart), 'Adm Sys.' (000011), 'Activity' (070), and 'PARKWAY DRAINS'. The 'Notes' section contains the text 'Mainline needs to be replaced. Has many cracks'. The 'Recommendations' section contains 'Reline or replace the line'. A video camera view is overlaid on the right side of the form, showing a close-up of the pipe interior with roots. Below the form is a table with the following data:

Seq#	Manhole ID	Footage	Min/Cntr	Observations	Se	Rem
1	MANHOLE1	0	10	Begin Inspection	1	
2	MANHOLE1	50	235	many holes in pipe	2	
3	MANHOLE1	100	284	pipe Broken	3	
4	MANHOLE1	150	369	ROOTS	3	
5	MANHOLE1	200	486	PIPE BROKEN	3	
6	MANHOLE1	250	654	PIPE OK	2	
7	MANHOLE1	300	875	PIPE CRACKED	3	
		300				
					Total	6.43

TV inspections will be linked to your camera system and will allow you to view photos and video recordings with a click of a button.

Work Orders

The MaintStar Sewer Work Order records a great deal of information and is *easy to use!*

The screenshot displays the 'MaintStar - Sewer Management Menu' application window. The main window title is 'Sewer Work Order #: MM0000029'. The interface includes a menu bar (Menu, SetupMenu, MainMenu, Printer, Window, Help) and a toolbar. The work order details are as follows:

- W/O#:** MM0000029
- Issued:** 06/19/07 10:34
- Target:** 06/19/07 10:34
- Closed:** 00/00/00 00:00
- WRReq. #:**
- Elapsed Hr:** 3,604.0778
- Asset Type:** Main Line
- Account No.:** 06-105-3303
- W/O Type:** DRAIN
- Adm Sys.:** 00001325
- Priority:** 001
- Project No.:**
- WProgress:** COMPLETED
- Activity:** 015
- Assign to:** 00018566 (DANIELJOHN)
- Approved by:** 00016318 (KEENWILLIAM)
- UDF 11:** MasterPW
- MISCELLANEOUS:**

The 'Task Description' field contains 'Sewer pipe leaking near hydrant'. The 'Action Taken' field is empty. Below this, there are sections for 'Problem' and 'Action' codes:

Problem	Description	Comment
1	LEAK	SEWER PIPE LEAKING

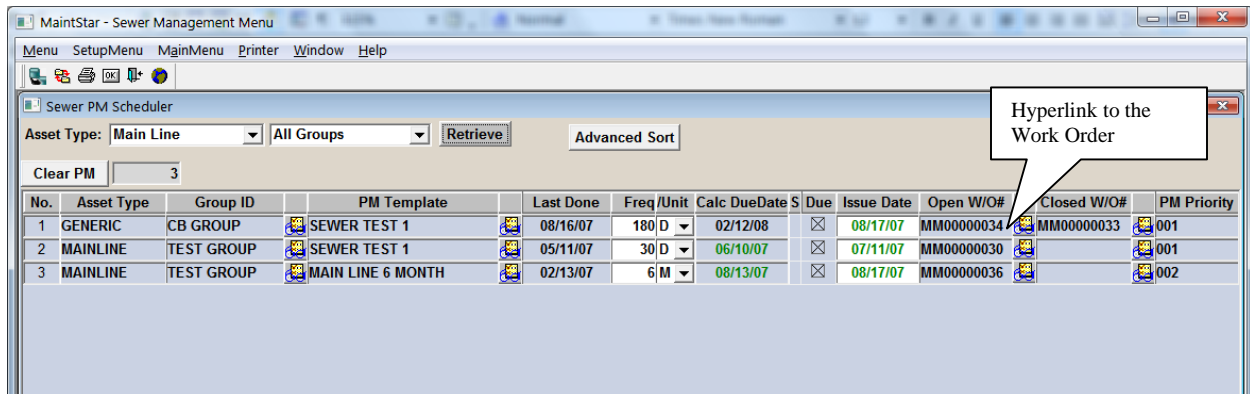
Action	Description	Status
1	PATCH-ML	In Prog

There are also checkboxes for 'Futher Action', 'County Problem', 'Claim Filed', and 'Customer Problem'. At the bottom, a table lists assets with their IDs, descriptions, cost shares, and comments.

Seq	Asset Id	Asset Description	Cost Share	Cost Share%	Comment
1	f5K0353_5K0352	f5K0353_5K0352	1.00	8.33	
2	f5K0354_5K0353	f5K0354_5K0353	1.00	8.33	
3	f5K0355_5K0354	f5K0355_5K0354	1.00	8.33	
4	f5K0356_5K0355	f5K0356_5K0355	1.00	8.33	
5	f5K0357_5K0356	f5K0357_5K0356	1.00	8.33	
6	f5K0420_5K0342	f5K0420_5K0342	1.00	8.33	
7	f5K0421_5K0420	f5K0421_5K0420	1.00	8.33	
8	f5K0422_5K0421	f5K0422_5K0421	1.00	8.33	
9	f5K0423_5K0422	f5K0423_5K0422	1.00	8.33	
10	f5K0433_5K0432	f5K0433_5K0432	1.00	8.33	
11	f6B0205_6B0201	f6B0205_6B0201	1.00	8.33	

- Unlimited number of assets can be recorded on the same work order. For example: if you did a cleaning of many main lines, you can make one work order and have all the main lines you cleaned on it. Cost information is tracked to each individual main line. If one storm pipe took more time than the others you can adjust the costs between them.
- You can record your work with “problem” and “action” codes that you create. These codes make for quick entry. Your reports will be accurate because your codes are standardized.
- *Information you need at your fingertips!* The history of each asset in the work order can be viewed right from the work order screen.
- Track your costs. MaintStar allows you to track costs by assets, asset types, cost centers, activities, locations and other categories.
- Parts used will track to your inventory, and the inventory quantity will be automatically adjusted when the work order is closed.
- If the work order started as a Web Based Service Request, the original request information is carried to the work order automatically. Automatic notification about the work order status will be sent by e-mail to the requestor.

PM Work Order Scheduling



The MaintStar Sewer Management Module helps you “Get ahead of the game”!

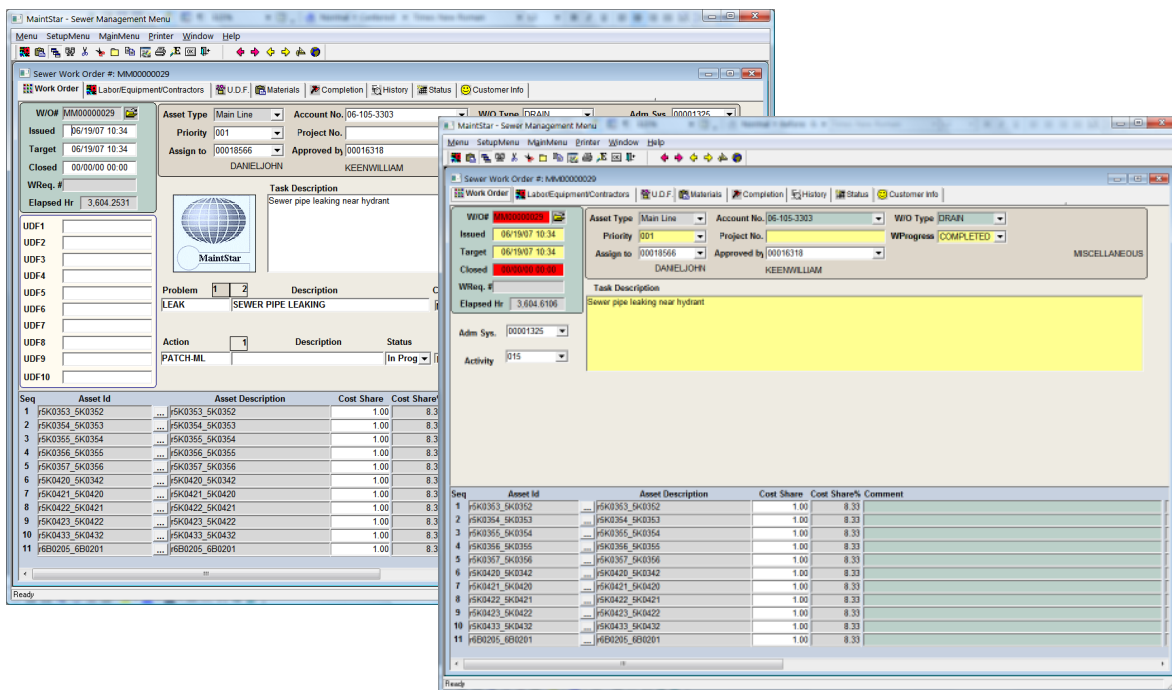
Turn your operation from *reactive* to *pro-active*. MaintStar has a PM Scheduling tool allowing you to set up cleanings and other repeated services at pre-determined intervals so you can take care of the causes of problems while they are still manageable.

You are in control

- You control the timing of PM services.
- You control which assets to include.
- You can work on assets in manageable groups according to their location.
- Easy to use Pm Scheduler shows you what was done and what needs to be done.
- Built-in “one click” hyperlinks give you full control of your scheduling at your fingertips!

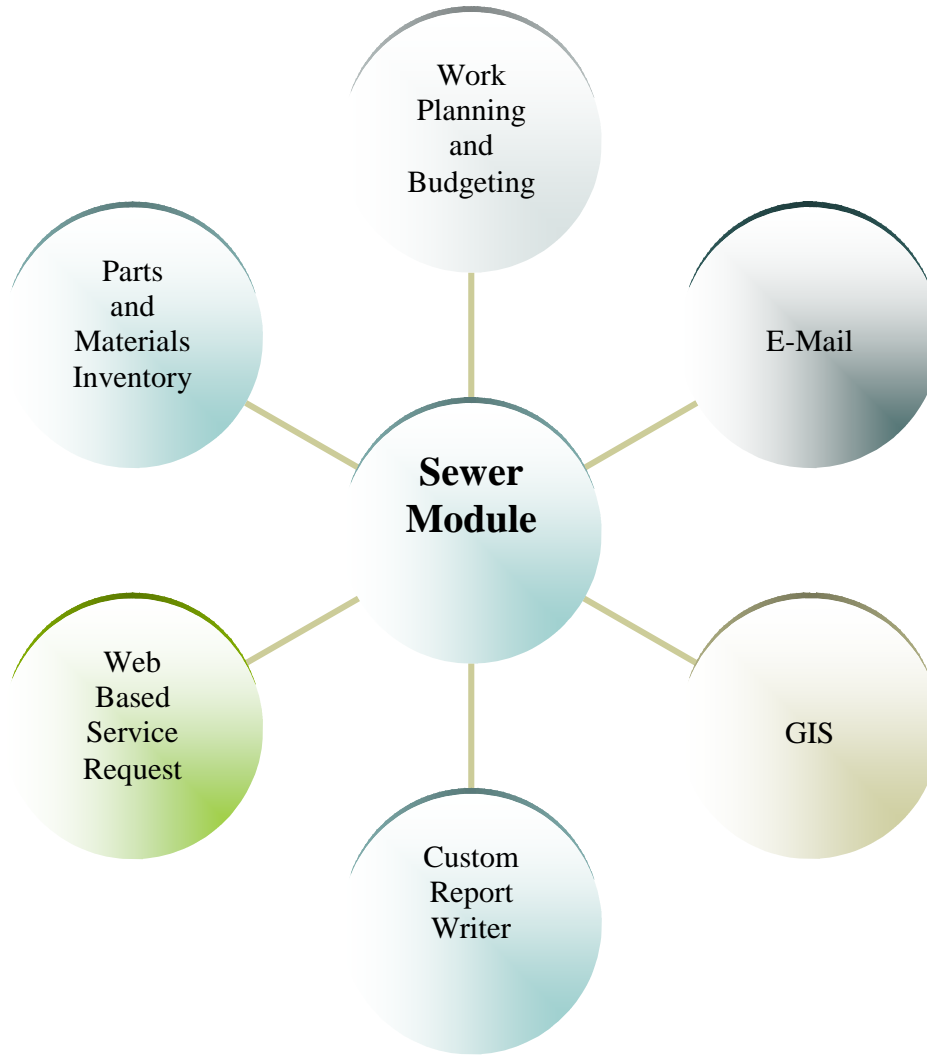
You can customize any MaintStar screen!

- Customize the Work Order, Asset Inventory and other entry screens
- Make fields visible or remove them from the screen
- Make fields hidden or view only for select users
- Create drop down lists of defined choices
- Change label color, size and font
- Totally rearrange screen layout with drag and drop ease.



Notice the difference in the Work Order screens above.
Any MaintStar screen can be customized by YOU! You can make them simple or sophisticated.
No programming experience required!

The Sewer Module integrates seamlessly with the rest of the MaintStar System



The Sewer Management Module is a part of the MaintStar “Complete Solution” for your organization. The MaintStar System is modular in design, and capable of meeting your real world management needs, no matter what assets you maintain.

Work Wirelessly

Working *out in the field* no longer means your crews have to work *out of touch*. You can keep your field service technicians in communication using wireless solutions. Once you begin using wireless data, you'll wonder how you ever lived without it. Wireless data gives you the freedom to work from almost anywhere and gives you access to information when you are on the go. Whether the wireless system is accessing work order instructions or checking asset location on a GIS map, you'll find it extremely effective. Wireless Wan network connections are available through cellular broadband providers.



Benefits of working wirelessly

- **Work in real time – all data is current, no batch transfer headaches**
- **Access your entire MaintStar System: all features, all data at your fingertips**
- **Make use of your GIS system in the field, where you need it the most.**
- **Go paperless –run your operation electronically.**



“You’ll wonder how you ever lived without it.”

MaintStar Reports

- The system has detailed reports designed for field operations personnel to appraise day-to-day activities.
- There are summary reports for management to review the overall operation.
- There are several pre-formatted reports for common analysis purposes, ready at a click of a button.
- When you need a customized view of your operation, MaintStar has an *in-house-designed* report-writing tool, for quick and easy report creation.

The following are a few examples of reports available in the system.

Open Work Orders “Assigned to” report

This report is intended to help users monitor work orders that are assigned to them.

The field “Assigned to” on the work order is used for assigning a work order to a crew leader or any other individual.

SEWER Management Menu

Menu SetupMenu MainMenu Printer Window Help

SEWER: Open W/O Assigned To - Task

Open W/O Assigned To: **DANIELJOHN - 00018566** Set Original Sort (Priority, Issue Date, Asset Type) Advanced Sort

SEWER

Open Work Orders Assigned To: **DANIELJOHN - 00018566**

Row	Priority	W/O #	Issued Date	Asset Type	Task Description	Street #	Street	City
1		MM00009004	10/19/06	MAINLINE	BROKEN MAINLINE	5678	ORCHARD AVE	IRVINE
2		000002853	03/18/00	MAINLINE				
3	001	MM00000035	08/16/07	GENERIC	Clogged water flow	91011	BEAULIEU CT	IRVINE
4	001	MM00000032	08/16/07	GENERIC	Clean overgrown vegetation	4564	ABINGTON GREEN CT	
5	001	MM00000030	07/11/07	MAINLINE	Customer complains of sulfuric odor	45B	ACORN DR	BEDFORD HEIGHTS
6	001	MM00000029	06/19/07	MAINLINE	Sewer pipe leaking near hydrant	34	RT 322	IRVINE
7	001	MM00000021	05/17/07	MAINLINE	Hydrant leaking			

Hyperlink to the work order to see more details

LABOR ASSIGNMENT REPORT

MaintStar - Standard Reports Menu

Menu CustomRpt MainMenu Printer Window Help

Municipalities Work Order Reports

Date Range From: 11/16/06 To: 00/00/00

Report Header: Labor Assignment Morning Report

Labor Assignment Morning Report
 Labor Productivity Report

Run Print

Labor Assignment Morning Report

Page 1 of 1
Date: 11/16/2007 15:54:15

Labor Assignment Morning Report From 11/16/06 to 11/16/07 Status = Open

<u>ADM SYS.</u>	<u>DATE</u>	<u>NAME</u>	<u>PROBLEM ADDRESS</u>	<u>TASK DESCRIPTION</u>	<u>W/O #</u>	<u>LOCATION</u>	<u>ACCOUNT</u>	<u>ACTIVITY</u>
00001	12/13/06	JACK FLIG	234 ACCENT PK, IRVINE	Main Line Clogged	MM000206	0005-APT-G	06-105-3303	012
00001	08/16/07	MALDONADO STEVEN	456 ANNABELLE DR, IRVINE	Main Line Leak	MM000376	10	06-105-3311	012
00001	08/16/07	KEEN WILLIAM	456 ANNABELLE DR, IRVINE	Main Line Leak	MM000376	10	06-105-3311	012
000013	08/16/07	KEEN WILLIAM	234 ORCHARD AVE, IRVINE	Sewer line is clogged. Sewage is backing up to custo	MM000367	0001-ADMIN	06-105-3303	010
000013	08/16/07	MALDONADO STEVEN	234 ORCHARD AVE, IRVINE	Sewer line is clogged. Sewage is backing up to custo	MM000367	0001-ADMIN	06-105-3303	010
00001325	02/07/07	JACK FLIG	2514 OLIVE ROAD, IRVINE	Clean drains	MM00000020	CHANNEL	055/C820	071
00001325	02/07/07	PELLEGRIN DANIE	2514 OLIVE ROAD, IRVINE	Clean drains	MM00000020	CHANNEL	055/C820	071
000013255	08/17/07	MALDONADO STEVEN		1.Flush Main Line2. Clean out Vegetation debris	MM00000036	CHANNEL	06-171-3302	812
000013255	08/17/07	PELLEGRIN DANIE		1.Flush Main Line2. Clean out Vegetation debris	MM00000036	CHANNEL	06-171-3302	812

Ready

LABOR PRODUCTIVITY REPORT

MaintStar - Standard Reports Menu

Menu CustomRpt MainMenu Printer Window Help

Municipalities Work Order Reports

Date Range From: 11/16/06 To: 00/00/00

Report Header: Labor Productivity Report

Labor Assignment Morning Report
 Labor Productivity Report

Run Print

Labor Productivity Report

Page 1 of 1
Date: 11/16/2007 15:54:37

Labor Productivity Report From 11/16/06 to 11/16/07 Status = Open

<u>ADM SYS.</u>	<u>DATE</u>	<u>NAME</u>	<u>ACTION DESCRIPTION.</u>	<u>Hours MM</u>	<u>W/O #</u>	<u>LOCATION</u>	<u>ACCOUNT</u>	<u>ACTIVITY</u>
00001	12/13/06	JACK FLIG	FILTEC #1-WEEKLY DT	2 :00	MM000206	0005-APT-G	06-105-3303	012
				<i>Sub Total Hour.</i>	<i>2:0</i>			
00001	08/16/07	MALDONADO STEVEN	test action	8 :00	MM000376	10	06-105-3311	012
00001	08/16/07	KEEN WILLIAM	test action	8 :00	MM000376	10	06-105-3311	012
000013	08/16/07	KEEN WILLIAM	Cleaned blocked sewer main.	8 :00	MM000367	0001-ADMIN	06-105-3303	010
000013	08/16/07	MALDONADO STEVEN	Cleaned blocked sewer main.	8 :00	MM000367	0001-ADMIN	06-105-3303	010
				<i>Sub Total Hour.</i>	<i>32:0</i>			
00001325	02/07/07	JACK FLIG	patch mainline again	2 :00	MM00000020	CHANNEL	055/C820	071
00001325	02/07/07	PELLEGRIN DANIE	patch mainline again	2 :00	MM00000020	CHANNEL	055/C820	071
				<i>Sub Total Hour.</i>	<i>4:0</i>			

Ready

Cost Report

Problem Detail Report

Page 1 of 2
Date: 11/19/2007 10:39:05

Problem Detail Report From 02/05/07 to 11/19/07 Module = Sewer Status = Open and Closed
Selected Cost includes labor, material, equipment, contractor, misc, worklog

<u>Problem ID</u>	<u>Problem description</u>	<u>Date</u>	<u>W/O #</u>	<u>Selected Cost</u>	<u>Total WO Cost</u>
CLOGGED	SEWER PIPE CLOGGED	02/07/2007	MM00000020	\$300.48	\$300.48
		08/16/2007	MM00000032	\$0.00	\$0.00
		11/16/2007	MM000206	\$2.24	\$2.24
<u>Sub Total for SEWER PIPE CLOGGED, ID# CLOGGED</u>				3	\$302.72
CORROSION	CORROSION	11/15/2007	000000029	\$0.00	\$0.00
		11/15/2007	000000041	\$545.60	\$545.60
<u>Sub Total for CORROSION, ID# CORROSION</u>				2	\$545.60
CRACKS	CRACKS	06/19/2007	000000017	\$1,600.00	\$1,600.00
<u>Sub Total for CRACKS, ID# CRACKS</u>				1	\$1,600.00
LEAK	SEWER PIPE LEAKING	06/19/2007	0000002853	\$235.00	\$235.00
		08/17/2007	MM00000021	\$0.00	\$0.00
		06/19/2007	MM00000029	\$0.00	\$0.00
		06/19/2007	MM00009004	\$0.00	\$0.00
		08/16/2007	MM000367	\$1,158.23	\$1,158.23
		11/16/2007	MM000376	\$1,195.36	\$1,195.36
<u>Sub Total for SEWER PIPE LEAKING, ID# LEAK</u>				6	\$2,588.59
LINE-LEAK	WATERLINE IS LEAKING	07/10/2007	000000003	\$604.70	\$604.70
<u>Sub Total for WATERLINE IS LEAKING, ID# LINE-LEAK</u>				1	\$604.70
ODOR	ODOR	08/17/2007	MM00000030	\$3,396.83	\$3,396.83
ODOR	ODOR	08/17/2007	MM00000035	\$0.00	\$0.00
		11/16/2007	MM00000040	\$2,699.95	\$2,699.95

The cost report is highly flexible.

- You can determine date range.
- You can View Costs for
 - Equipment
 - Material usage
 - Employee
 - Problem
 - Action
 - By Street location
- You can view the report for any specific cost factor or for all expense categories
- You can view the information in both detail and summary form



Municipalities Suite

The MaintStar Sewer Management Module will help you work more efficiently and give you more control over your operation. Our system has been helping organizations like yours since 1984. The system has a wealth of tools and features designed for real world uses.

The most Important Feature of all ...

MaintStar is User Friendly!

Ease of use has always been the hallmark of MaintStar design. This tradition of simplicity continues with the Sewer Management Module.

MaintStar - designed for the user.

If you are ready to streamline your Sewer Management

Call us at 800-255-5675

E-mail info@mainTstar.com

Fax - 949-458-7626

www.mainTstar.com

**MaintStar Inc.
28 Hammond Suite D
Irvine California 92618**

MaintStar Storm Water Module

Managing your Operation is easier than ever!



Part of the MaintStar System

MaintStar is a comprehensive solution for any City or Municipality. Storm Water is one of 30 modules available to meet a variety of needs.



- **Identify and record Storm Water Assets:** Dedicated screens and tables for every major asset type; a place to record every important attribute of your assets. In addition to the standard fields, MaintStar provides over 100 additional user defined fields for each asset.
- **Track your work:** Easy entry work orders record what assets were serviced, what were the problems, and what actions were taken to correct the problems. The work order captures who did the work, and the resulting cost. When you use parts and materials on the work order, your inventory count will adjust automatically.
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- **Operations information** available in easy to analyze reports

Storm Water Assets Inventory

Screens designed specifically for:

- Storm Pipes
- Detention /Retention basins
- Catch Basins
- Culverts/Channels
- Pump Stations
- Pumps
- Generic Asset

In addition to the specific asset inventory screens listed above, the system has a “generic asset” entry. This is a flexible, configurable entry category that will allow you to create unlimited number of asset types. There is *no limit* to the number of new categories you can create, or number of asset entries for each category.

A Sample of a Storm Pipe Asset Screen:

STORM PIPE SWP004 - SW004

Location/Specs UDFs History PM Templates Inspection History

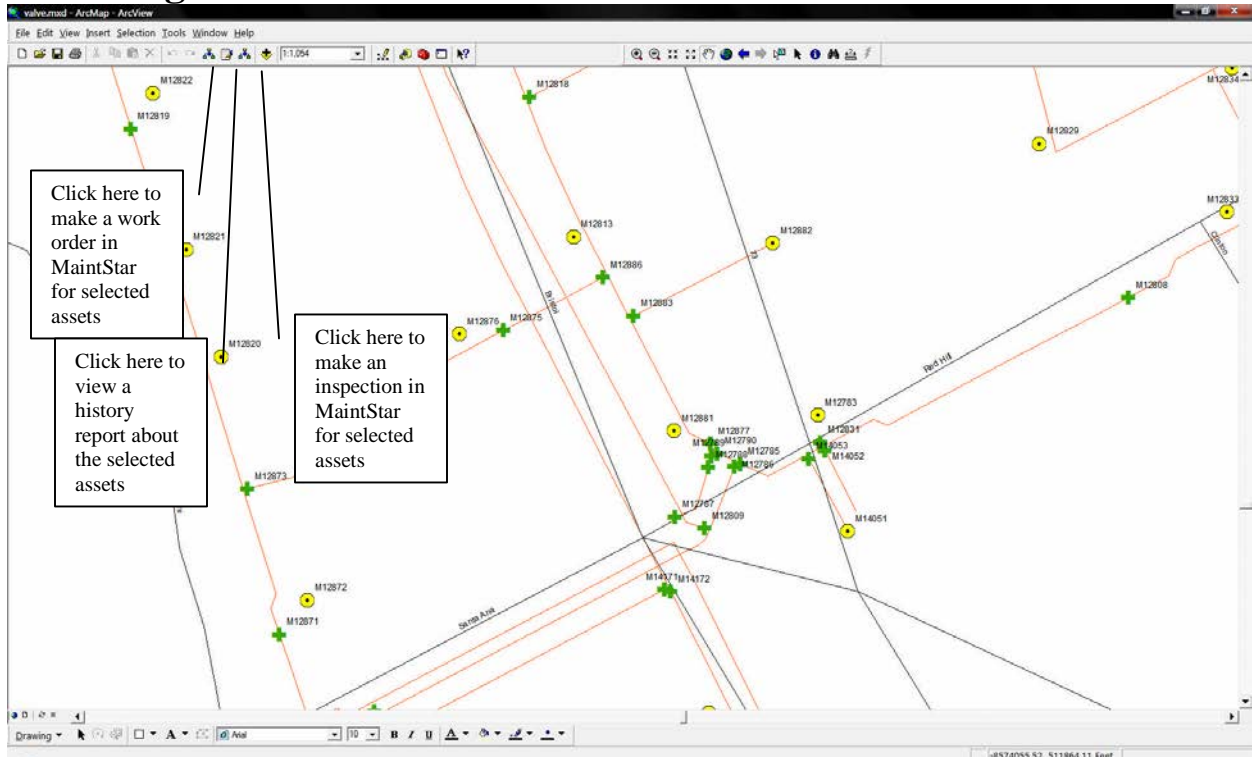
Storm Pipe ID	SWP004	Description	SW004
Pipe Line Type	ENC GRAVITY	MAIN Basin	NORTHRIDGE
Alt Storm Pipe Id	Sp-456	Node 1 Type	Storm Pipe
		Node 1 ID	SWP003
		Node 2 Type	Catch Basin
		Node 2 ID	CS001

Block Number	3514	Street	ACME CT	Cross Street	ACOSTA ST
City	CYPRESS	State	CA	Zip Code	91701
Location Ref.	CURB LINE	Easement	<input type="checkbox"/>	X Coordinate	12457687
Drainage District	LAKE	Y Coordinate			25478923
Neighborhood	TOWN	Z Coordinate			98725464
Map ID	01-NORTHSIDE	Map Sheet			39D4
Inspection Interval	30 Days	NPDES Permit			4587C567
Last Inspection	00/00/0000	Next Inspection	00/00/0000	Rating	.00

Material Type	RCP	Dia/Height (in)	36.00		
Shape	SQUARE	Length (ft)	50.00		
Surface Type	ASPHALT	Capacity (cfs)	20.00		
Line Type	GRAVITY	Liner Included	<input type="checkbox"/>	Slope %	10.00
US Rim Elevation	15.00	DS Rim Elevation	10.00	Manning's No.	0.0400
US Invert Elevation	20.00	DS Invert Elevation	15.00		
Date Built	06/05/1955	Owner	COUNTY		

Notes	Comments
HIGH DEBRIS	

GIS Integration



Storm Water Assets shown on a G.I.S. Map

Information is easier to understand when we can see it graphically. This is why the “**G**eographic **I**nformation **S**ystems”, referred to as “GIS” are being developed by municipalities everywhere.

The MaintStar Storm Water Module will fully integrate with your GIS System. When new assets are added to your GIS tables they will automatically be added to the MaintStar records. The system works bi-directionally to keep your MaintStar and your G.I.S. databases in-sync.

There are many ways the MaintStar/GIS integration will be helpful to you:

- You can select an asset from a work order, and see it identified in the GIS map.
- You can select multiple assets by circling an area in the GIS map. You can create a new work order in MaintStar with just a click all the selected assets will automatically be entered on the work order.
- Inspections can be created in the same easy way.
- You can view the entire history of work performed by clicking on any asset, or group of assets in the GIS map.
- You can use the MaintStar built-in Custom Report Writer to create your own queries and view your results on the GIS map.

Create TV Inspections and Regular Inspections

An inspection is a way to make a record of observations, measurements, or other conditions about the various items your department maintains and services.

MaintStar Storm Water Module will allow you to integrate with WinCan, Granite Xp and other TV inspection systems to record your inspection information.

You can set up inspection intervals for a pre-determined group of assets and MaintStar will notify you when the inspections are due.

- Storm Pipe TV Inspections
- Detention/Retention basin Inspection
- Catch Basin Inspection
- Culvert/Channel Inspection
- Pump Station Inspection
- Pump Inspections

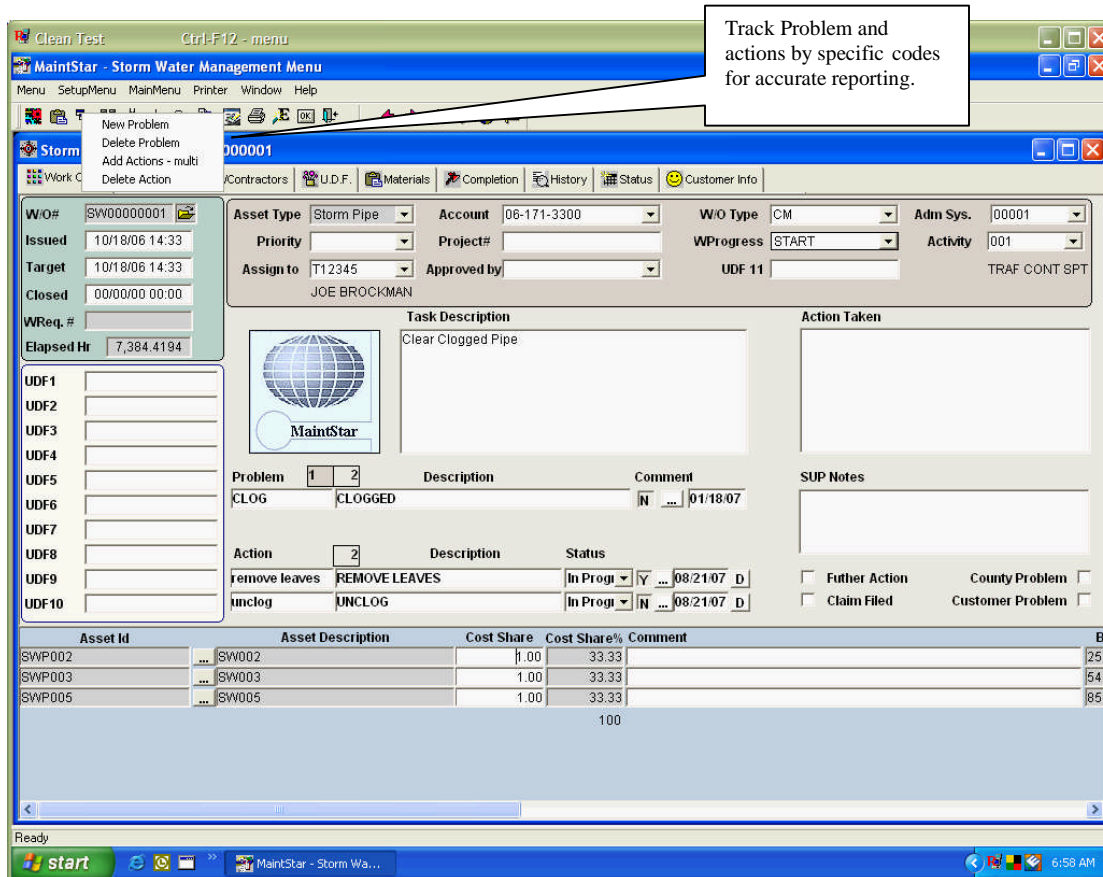
The screenshot displays the 'MaintStar - Storm Water Management Menu' application. The main window is titled 'TV Inspection' and contains several data entry fields and a table. The 'Storm Pipe ID' is SWP001. The 'Material' is RCP, 'Diameter (in)' is 36.00, 'Joint (ft)' is 3.00, 'Length (ft)' is 300.00, and 'Depth (ft)' is 6.00. The 'Street' is ELM, 'TV Direction' is UPSTREAM, 'Project' is 4512C200, and 'Tape/CD' is 1203. The 'Pipe Type' is FORCE MAIN. The 'Last Inspected' date is 06/21/06 09:37. The 'NPDES Permit' is 14587C-32, 'Block No.' is 6587, 'Street' is ACME CT, 'Cross Street' is CERRITOS, 'City' is CERRITOS, and 'Map ID' is 01-NORTHSIDE. The 'Notes' field contains 'NORMAL TV INSPECTION'. The 'Recommendations' field is empty. A video recording of a pipe inspection is shown in the bottom right corner, with a timestamp of 06/21/06 10:03:00. The video shows a close-up of a pipe with roots. The text 'Roots FT 273.4' is visible in the bottom left corner of the video frame.

Seq#	Catch Basin ID	Footage	Min/Cntr	Observations	Severity	Rating	Clock Location	Info
1	CB001	50	7	START	001	1	1	
2	CB001	100	100	NORMAL DEBRIS BUILDUP	001	1	6	
3	CB001	200	250	NO DEBRIS	002	2	2	
4	CB001	300	600	END	001	2	9	
		300			Total	1.50		

TV inspections will be linked to your camera system and will allow you to view photos and video recordings with a click of a button.

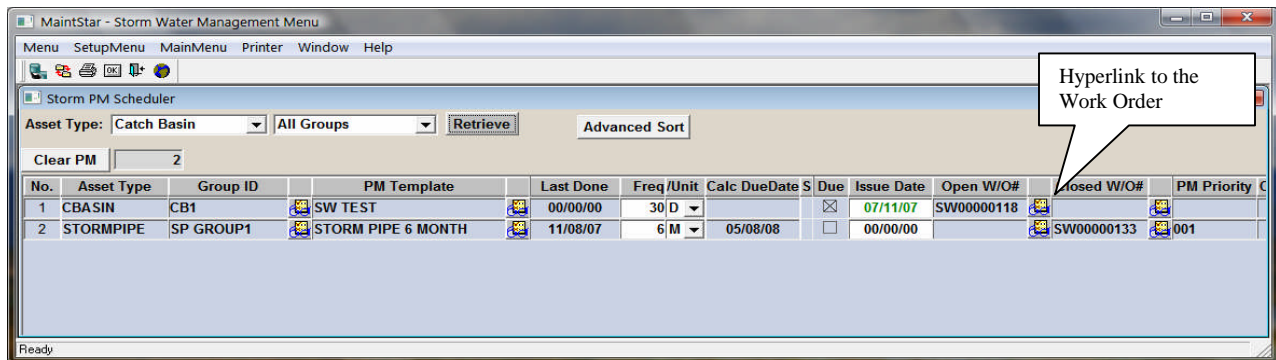
Work Orders

The MaintStar Storm Water Work Order records *lots of information* and is *easy to use!*



- Unlimited number of assets can be recorded on the same work order. For example: if you did a cleaning of many storm pipes, you can make one work order and have all the storm pipes you cleaned on it. Cost information is tracked to each individual storm pipe. If one storm pipe took more time than the others you can adjust the costs between them.
- You can record your work with “problem” and “action” codes that you create. These codes make for quick entry. Your reports will be accurate because your codes are standardized.
- *Information you need at your fingertips!* The history of each asset in the work order can be viewed right from the work order screen.
- Track your costs. MaintStar allows you to track costs by assets, asset types, cost centers, activities, locations and other categories.
- Parts used will track to your inventory, and the inventory quantity will be automatically adjusted when the work order is closed.
- If the work order started as a Web Based Service Request, the original request information is carried to the work order automatically. Automatic notification about the work order status will be sent by e-mail to the requestor.

PM Work Order Scheduling



The MaintStar Storm Water Module helps you “Get ahead of the game”!

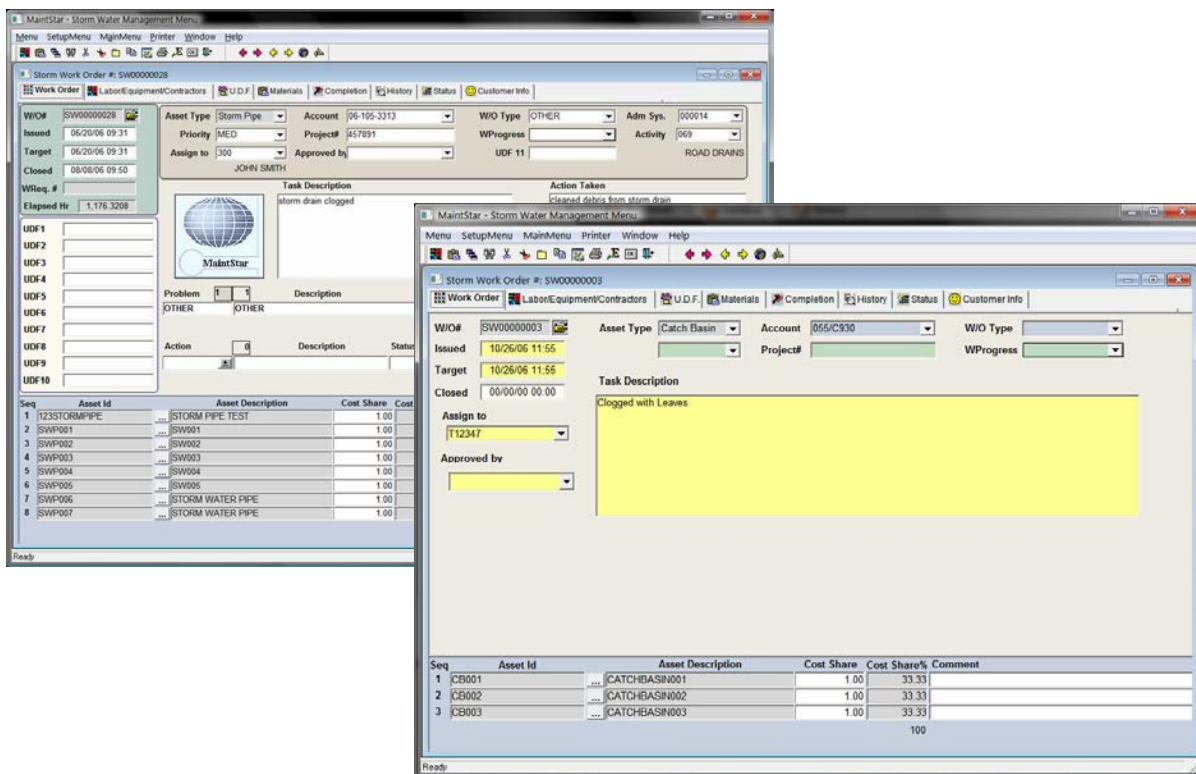
Turn your operation from *reactive* to *pro-active*. MaintStar has a PM Scheduling tool allowing you to set up cleanings and other repeated services at pre-determined intervals so you can take care of the causes of problems while they are still manageable.

You are in control

- You control the timing of PM services.
- You control which assets to include.
- You can work on assets in manageable groups according to their location.
- Easy to use Pm Scheduler shows you what was done and what needs to be done.
- Built-in “one click” hyperlinks give you full control of your scheduling at your fingertips!

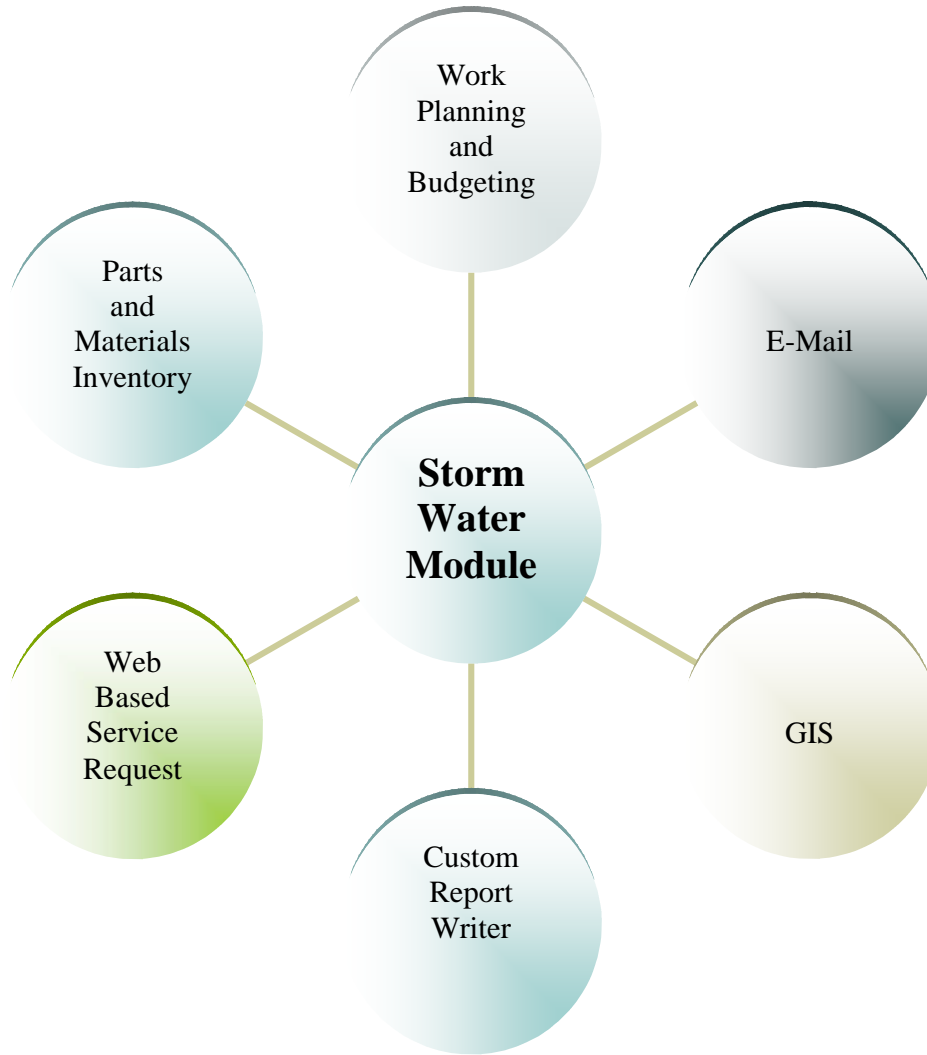
You can customize any MaintStar screen!

- Customize the Work Order, Asset Inventory and other entry screens
- Make fields visible or remove them from the screen
- Make fields hidden or view only for select users
- Create drop down lists of defined choices
- Change label color, size and font
- Totally rearrange screen layout with drag and drop ease.



Notice the difference in the Work Order screens above.
Any MaintStar screen can be customized by *YOU!* You can make them simple or sophisticated.
No programming experience required!

The Storm Water Module integrates seamlessly with the rest of the MaintStar System



The Storm Water Module is a part of the MaintStar “Complete Solution” for your organization. The MaintStar System is modular in design, and capable of meeting your real world management needs, no matter what assets you maintain.

Work Wirelessly

Working *out in the field* no longer means your crews have to work *out of touch*. You can keep your field service technicians in communication using wireless solutions. Once you begin using wireless data, you'll wonder how you ever lived without it. Wireless data gives you the freedom to work from almost anywhere and gives you access to information when you are on the go. Whether the wireless system is accessing work order instructions or checking asset location on a GIS map, you'll find it extremely effective. Wireless Wan network connections are available through cellular broadband providers.



Benefits of working wirelessly

- **Work in real time – all data is current, no batch transfer headaches**
- **Access your entire MaintStar System: all features, all data at your fingertips**
- **Make use of your GIS system in the field, where you need it the most.**
- **Go paperless –run your operation electronically.**



“You’ll wonder how you ever lived without it.”

MaintStar Reports

- The system has detailed reports designed for field operations personnel to appraise day-to-day activities.
- There are summary reports for management to review the overall operation.
- There are several pre-formatted reports for common analysis purposes, ready at a click of a button.
- When you need a customized view of your operation, MaintStar has an *in-house-designed* report-writing tool, for quick and easy report creation.

The following are a few examples of reports available in the system.

Open Work Orders “Assigned to” report

This report is intended to help users monitor work orders that are assigned to them.

The field “Assigned to” on the work order is used for assigning a work order to a crew leader or any other individual.

STORM: Open W/O Assigned To - Task

Open W/O Assigned To: JOHN SMITH - 300 Set Original Sort (Priority, Issue Date, Asset Type) Advanced Sort

STORM								
Open Work Orders Assigned To: JOHN SMITH - 300								
Row	Priority	W/O #	Issued Date	Asset Type	Task Description	Street #	Street	City
1	001	SW00000001	08/22/07	STORMPIPE	Clear Clogged Pipe	2342	ACME CT	IRVINE
2	001	SW00000032	06/20/06	STORMPIPE	removed debris from pipe entrance			
3	001	SW00000031	06/20/06	STORMPIPE	water is beginning to backup around pipe entrance			
4	001	SW00000029	06/20/06	STORMPIPE	lots of leaves in pipe			
5	002	SW00000025	05/17/07	CULVERT	culvert overflowing			
6	002	SW00000005	10/27/06	PUMP	Pump Leacing at seal			
7	002	SW00000002	10/26/06	STORMPIPE	Storm Pipe clogged	5675	ACME CT	
8	002	SW00000020	10/18/06	STORMPIPE	Clean clog			
9			06/20/06	DBASIN	car landed in basin			
10			06/20/06	STORMPIPE	excessive amount of oil in water			
11			06/20/06	STORMPIPE	storm drain clogged			

Run Date: 8/22/2007 09:25:39 Page: 1 of 1

Hyperlink to the work order to see more details

LABOR ASSIGNMENT REPORT

MaintStar - Standard Reports Menu

Menu CustomRpt MainMenu Printer Window Help

Municipalities Work Order Reports

Date Range From: 10/09/07 To: 00/00/00

Report Header: Labor Assignment Morning Report

Labor Assignment Morning Report
 Labor Productivity Report

Run Print

Adm. System: [Dropdown]
 Activity: [Dropdown]
 Program: [Dropdown]
 Location: [Dropdown]
 Account No.: [Dropdown]
 Work Order No.: [Dropdown]
 Labor: [Dropdown] MALDONADO STEVEN
 Module: Storm Open Closed Both

Labor Assignment Morning Report

Page 1 of 2
 Labor Assignment Morning Report From 10/09/07 to 11/09/07 Status = Open and Closed
 Date: 11/9/2007 14:06:27

ADM SYS.	DATE	NAME	PROBLEM ADDRESS	TASK DESCRIPTION	W/O #	LOCATION	ACCOUNT	ACTIVITY
000010	11/09/07	MALDONADO STEVEN	5675 ACME CT,	Storm Pipe clogged	SW00000002	0006-BEN/P	06-105-3310	007
000011	11/09/07	PELLEGRINIDANIE	453 ACREVIEW CT, IRVINE	lots of leaves in pipe	SW00000029	0003-APT-B	06-171-3300	007
000011	11/09/07	MALDONADO STEVEN	453 ACREVIEW CT, IRVINE	lots of leaves in pipe	SW00000029	0003-APT-B	06-171-3300	007
0000111	11/09/07	MALDONADO STEVEN	567 ALPENA AVE,	Clogged with Leaves	SW00000003	0003-APT-B	055/C930	010
0000111	11/09/07	PELLEGRINIDANIE	567 ALPENA AVE,	Clogged with Leaves	SW00000003	0003-APT-B	055/C930	010
0000111	11/09/07	PELLEGRINIDANIE	5675 BEACONWOOD CT, MIDDLEFIEL	Clean clog	SW00000020	BLDG1	06-105-3310	009
0000111	11/09/07	MALDONADO STEVEN	5675 BEACONWOOD CT, MIDDLEFIEL	Clean clog	SW00000020	BLDG1	06-105-3310	009
0000111	11/09/07	PELLEGRINIDANIE	23424 ACADEMY VIEW CT, ORANGE	Leaves	SW00000024	4	06-105-3301	005

Ready

LABOR PRODUCTIVITY REPORT

MaintStar - Standard Reports Menu

Menu CustomRpt MainMenu Printer Window Help

Municipalities Work Order Reports

Date Range From: 10/09/07 To: 00/00/00

Report Header: Labor Productivity Report

Labor Assignment Morning Report
 Labor Productivity Report

Run Print

Adm. System: [Dropdown]
 Activity: [Dropdown]
 Program: [Dropdown]
 Location: [Dropdown]
 Account No.: [Dropdown]
 Work Order No.: [Dropdown]
 Labor: [Dropdown] DANIEL JOHN
 Module: Storm Open Closed Both

Labor Productivity Report

Page 1 of 2
 Labor Productivity Report From 10/09/07 to 11/09/07 Status = Open and Closed
 Date: 11/9/2007 14:11:39

ADM SYS.	DATE	NAME	ACTION DESCRIPTION	Hours MM	W/O #	LOCATION	ACCOUNT	ACTIVITY
000010	11/09/07	MALDONADO STEVEN	Cleared Clog	5 :00	SW00000002	0006-BEN/P	06-105-3310	007
				<i>Sub Total Hour.</i>	<i>5:0</i>			
000011	11/09/07	PELLEGRINIDANIE	cleaned and removed leaves from pipe	12 :20	SW00000029	0003-APT-B	06-171-3300	007
000011	11/09/07	MALDONADO STEVEN	cleaned and removed leaves from pipe	12 :20	SW00000029	0003-APT-B	06-171-3300	007
0000111	11/09/07	MALDONADO STEVEN	removed Leaves	13 :20	SW00000003	0003-APT-B	055/C930	010
0000111	11/09/07	PELLEGRINIDANIE	removed Leaves	13 :20	SW00000003	0003-APT-B	055/C930	010
0000111	11/09/07	PELLEGRINIDANIE	Removed Blockage	6 :00	SW00000020	BLDG1	06-105-3310	009
0000111	11/09/07	MALDONADO STEVEN	Removed Blockage	6 :00	SW00000020	BLDG1	06-105-3310	009
0000111	11/09/07	PELLEGRINIDANIE	Removed Blockage	15 :00	SW00000024	4	06-105-3301	005

Ready

Cost Report

Problem Detail Report

Problem Detail Report From 10/26/06 to 11/09/07 Module = Storm Status = Open and Closed
 Selected Cost includes labor, material, equipment, contractor, misc, workday

<u>Problem ID</u>	<u>Problem description</u>	<u>Date</u>	<u>W/O #</u>	<u>Selected Cost</u>	<u>Total WO Cost</u>
CLOG	CLOGGED	08/22/2007	SW00000002	\$488.15	\$488.15
		08/22/2007	SW00000133	\$0.00	\$0.00
<i>Sub Total for CLOGGED, ID# CLOG</i>			2	\$488.15	
DEBRIS	REMOVE DEBRIS	11/09/2007	SW00000003	\$1,321.87	\$1,321.87
		08/22/2007	SW00000020	\$744.84	\$744.84
		08/22/2007	SW00000031	\$1,748.88	\$1,748.88
		08/22/2007	SW00000032	\$1,690.74	\$1,690.74
		07/10/2007	SW00000117	\$833.04	\$833.04
		11/09/2007	SW00000130	\$1,123.59	\$1,123.59
		11/09/2007	SW00000135	\$0.00	\$0.00
<i>Sub Total for REMOVE DEBRIS, ID# DEBRIS</i>			7	\$7,462.96	
LEAVES	LEAVES IN WATER	02/07/2007	SW00000024	\$1,487.10	\$1,487.10
		08/22/2007	SW00000029	\$1,568.81	\$1,568.81
		11/09/2007	SW00000128	\$1,156.63	\$1,156.63
		11/09/2007	SW00000131	\$1,043.12	\$1,043.12
		11/09/2007	SW00000134	\$1,421.01	\$1,421.01
<i>Sub Total for LEAVES IN WATER, ID# LEAVES</i>			5	\$6,676.67	
OIL	OIL IN WATER	08/22/2007	SW00000025	\$1,090.71	\$1,090.71
		11/09/2007	SW00000127	\$826.17	\$826.17
<i>Sub Total for OIL IN WATER, ID# OIL</i>			2	\$1,916.88	
OTHER	OTHER	08/22/2007	SW00000005	\$60.00	\$60.00

The cost report is highly flexible.

- You can determine date range.
- You can View Costs for
 - Equipment
 - Material usage
 - Employee
 - Problem
 - Action
 - By Street location
- You can view the report for any specific cost factor or for all expense categories
- You can view the information in both detail and summary form



Municipalities Suite

The MaintStar Storm Water Module will help you work more efficiently and give you more control over your operation. Our system has been helping organizations like yours since 1984. The system has a wealth of tools and features designed for real world uses.

The most Important Feature of all ...

MaintStar is User Friendly!

Ease of use has always been the hallmark of MaintStar design. This tradition of simplicity continues with the Storm Water Module.

MaintStar - designed for the user.

If you are ready to streamline your Storm Water management

Call us at 800-255-5675

E-mail info@mainTstar.com

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www.mainTstar.com

**MaintStar Inc.
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Irvine California 92618**

GIS



MaintStar's GIS Integration:

The mapping functionality dramatically streamlines the integration between MaintStar and GIS. With MaintStar and GIS integration, map layers can be embedded directly within the MaintStar's user desktop for easy reference. The team of MaintStar application developers can drop map controls on to a multitude of data entry screens further tightening the integration of GIS into MaintStar's driven business processes. These configurations and architectures offer several functional advantages, which include:

- ◆ *MaintStar GIS supports both ArcGIS Server and Google maps, providing agencies with a rich user experience when working with their spatial data*
- ◆ *MaintStar provides for spatial analysis which can be deployed anywhere within the MaintStar System – in the office, in the field or over the web for public access*
- ◆ *MaintStar allows for the initiation of multiple types of tasks to be taken directly from the maps, and much more!*



MAINTSTAR GIS KEY FEATURES:

EASY-TO-USE

- ◆ *Display parcel, permit, code enforcement and other data*
- ◆ *Evaluate data via Spatial Query Analysis*
- ◆ *Optimize travel routes for field staff*
- ◆ *Save multiple map views as HTML files*
- ◆ *Measure distances with point-to-point data*
- ◆ *Provide public access to GIS maps*
- ◆ *Spatial distance alerts*



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MAINTSTAR