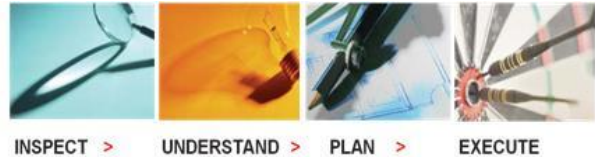


September 21, 2011



Andrew Hummel, P.E.
Acting Utility Manager
City of Sparks Community Services Department
431 Prater Way
Sparks, NV 89431

**RE: Cost Estimate for Large Pipe Asset Management Baseline assessment,
City of Sparks, NV**

Dear Andy,

Thank you for your interest in RedZone Robotics. As an approved vendor, we are pleased to submit our price schedule for the above referenced project.

RedZone Robotics, Inc. is the leading provider of information and tools that help collection systems managers use the limited financial and human resources they have most wisely, and manage their collection system based on facts.

After meeting with you and your team, we understand that the purpose of this project is to furnish Sparks with services and tools that can be used in conjunction with the existing GIS to provide the following benefits:

- Establish a baseline condition assessment for all large pipe in the system, which is approximately 43,698 linear feet of 18" – 60" Internal Diameter Pipe.
- Provide this information in ICOM3 decision support software
- Prepare information such that it can be used for rate study analysis and CIP planning

RedZone will provide all necessary software, equipment, material, and labor to execute the scope of work. This includes data integration with GIS upon completion, enhancing the established ICOM3 instance, mobilization, demobilization, deployment, and transporting our robot platform, post processing the sensor data, and reporting the following inspection results.

While laser is not currently available in the industry for pipes less than 36" in diameter, RedZone would like Sparks to be its official pilot partner for this exclusive new RedZone feature/service. Laser results will be provided for pipelines less than 36" at no extra charge.

The underlying assumption is that all of this work will be completed in a single mobilization. This will result in significant savings to Sparks and help get this information into the hands of your team as quickly as possible to help prepare for the next round of council meetings and budget planning.

RedZone Robotics, Inc.

91 43rd Street, Suite 250
Pittsburgh, PA 15201

Phone 412.476.8980
Fax 412.476.8981

www.redzone.com

Proposed Schedule: TBD

Final Report Delivery: Includes upload of data into software and conventional reports 30-days after deployment completion * Please note that we view the CCTV and sonar data as it is collected, therefore we report major defects and pipe failures immediately.

Exceptions: Final price/contract is contingent on reviewing all manhole structures to ensure there is sufficient clear vertical access (24") (no obstructions) for the robot to enter the manhole and into the pipe.

Proposal Expiration: This proposal expires in 30 days.

We thank you for considering our technology and welcome the opportunity to continue to work together. If you have any questions or require any additional information, please feel free to contact me at (925) 262-7366.

Sincerely,

A handwritten signature in black ink that reads "Michelle Beason". The signature is written in a cursive style and is followed by a horizontal line.

Michelle Beason, PE
Business Development Manager, West Region

Re: City of Sparks Sewer Pipeline Condition Assessment

Project Scope

The scope of work includes the inspection and preparation of data for approximately 43,698 LF of 18”-60” diameter sewer pipes. The inspections will be conducted using a combination of conventional CCTV, the Stand Alone Sonar unit, a Floating Inspection Platform and/or the Responder Robotic Tracked Platform employing a combination of multi-sensors including Digital CCTV, Sonar, H2S Gas/Temp, and Laser. All data will be delivered in Redzone’s ICOM3 software and in standard Multiple Sensor Information (MSI) reports, which provide observable pipe defects, sediment heights and volumes, ovality, corrosion, and gas levels.

The following technologies will be used for each of the following pipe size ranges:

CCTV with Laser, and Stand Alone Sonar:

Our CCTV camera and Stand Alone Sonar (SAS) will be used for the 18” – 30” pipelines in this project. Sparks will be the official pilot partner for laser on our CCTV tractor. Laser is not currently available in pipes less than 36”, so Sparks will be getting the most advanced results possible with this new enhancement. The SAS will be used to sonar all lines to determine sediment levels, and any other large obstructions that may be under the water line. Traffic control is budgeted as \$2,000/night deployment; however, actual traffic control expenses, plus a 5% overhead fee, will be submitted to the City of Sparks for reimbursement.

Pipes to be inspected with Conventional CCTV and SAS:

- 18” = 9,578 LF
- 21” = 1,508 LF
- 24” = 14,152 LF
- 30 “ = 2,023 LF
- TOTAL Length: 27,261 LF

Pricing for CCTV, laser pilot, and Stand Alone Sonar

Table 1. Schedule of Values

Item/Description	QTY	U/M	Unit Cost	Total Cost
Mobilization and Demoblization	1	LS	\$10,000.00	\$ 10,000.00
CCTV plus Stand Alone Sonar	27,261	LF	\$7.50	\$ 204,457.50
CCTV inspection with defect coding	27,261	LF	Inc	
Laser Pilot	27,261	LF	No Charge	
Sonar Data Collection	27,261	LF	Inc	
Traffic Control *	13	Nights	\$2,000.00	\$ 26,000.00
Report QA/QC & ICOM3 Software Viewer	1	LS	\$4,900.00	\$ 4,900.00
Processing of Standard Reports & GIS Mapping	1	LS	\$1,500.00	\$ 1,500.00
Total Estimated Cost				\$ 246,857.50

*Traffic Control will be billed to the City of Sparks as actual expenses, plus 5%.

Robotic Inspection of 36” and larger Pipelines:

The appropriate MSI platform, housing laser, sonar, TV and gas sensors, will be used for the 36” and larger pipelines, depending on flow conditions and debris profiles and schedule. All multi-sensors will be collected during these inspections, depending on conditions. Sonar requires a minimum of 18” of flow in the pipelines. Laser requires a minimum of 30” of headroom above the water line. Based on diurnal curves provided by the City of Sparks, it appears that night deployments will be required to take advantage of low flow periods. No flow diversions are included in this proposal. Traffic control is budgeted as \$2,000/night deployment; however, actual traffic control expenses, plus a 5% overhead fee, will be submitted to the City of Sparks for reimbursement.

Pipes to be inspected with Robotic Platforms:

- 36” = 10,147” LF
- 39” = 1,767 LF
- 42” = 300 LF
- 48” = 4,061 LF
- 60” = 22 LF
- Unknown – 142 LF
- TOTAL Length: 16,439 LF

Robotic Inspection including CCTV, laser, Sonar, H2S Gas and Temperature continuously.

Table 1. Schedule of Values				
Item/Description	QTY	U/M	Unit Cost	Total Cost
Mobilization and Demobilization	1	LS	\$10,000.00	\$ 10,000.00
Multi Sensor Inspection	16439	LF	\$8.00	\$ 131,512.00
CCTV Data Collection	16439	LF	Inc	
3D Ladar Data Collection (as required)	16439	LF	Inc	
Sonar Data Collection	16439	LF	Inc	
H2S Gas and Temperature Collection (included)	16439	LF	Inc	
Traffic Control *	8	nights	\$2,000.00	\$ 16,000.00
Report QA/QC & ICOM3 Software Viewer	1	LS	\$6,000.00	\$ 6,000.00
Processing of Standard Reports & GIS Mapping	1	LS	\$1,000.00	\$ 1,000.00
Total Estimated Cost				\$ 164,512.00

*Traffic Control will be billed to City of Sparks as Actual expenses, plus 5%.

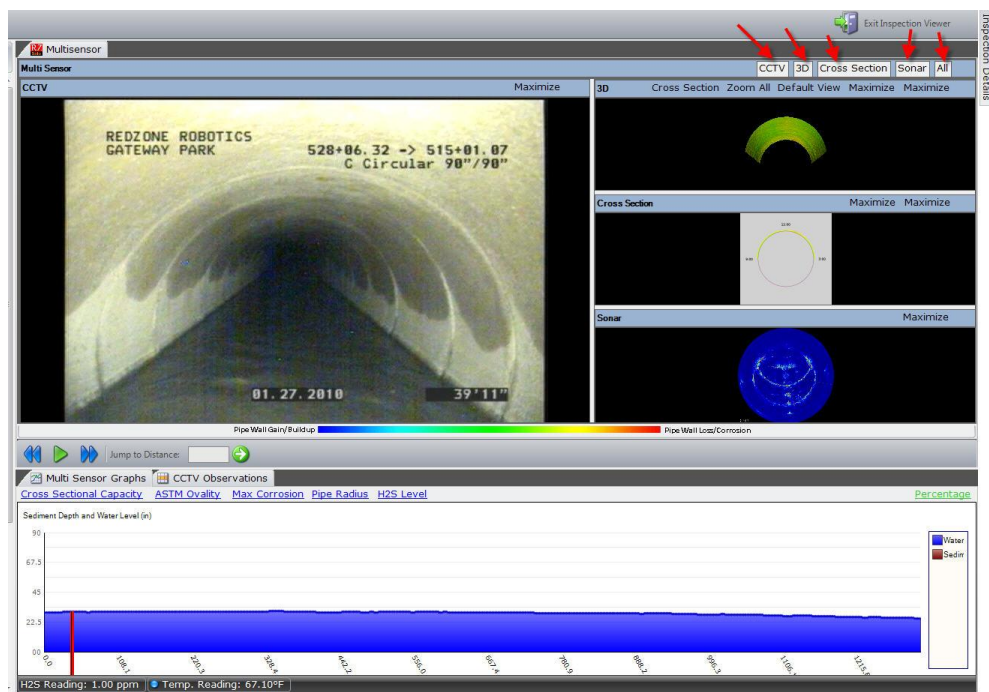
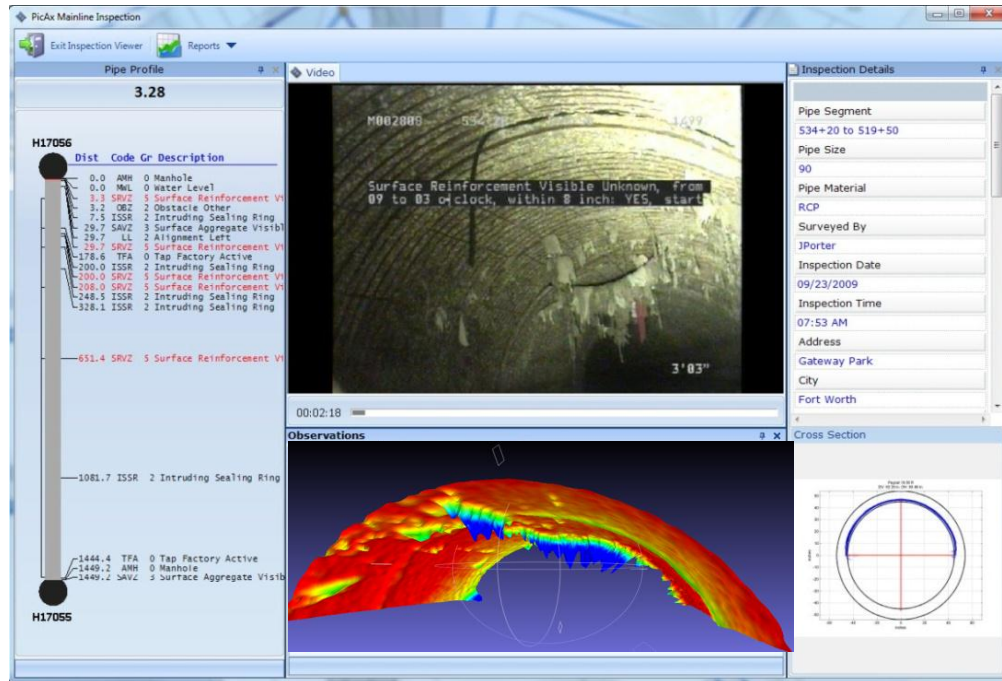
ICOM 3 Viewer

All inspection results will be provided within RedZone’s unique MSI inspection assessment and viewing tools that incorporate our 3D viewing environment powered by our ICOM3 software. RedZone’s viewing software integrates interactive reports and performance metrics, linked to system assets on the GIS map.

The MSI viewer provides a robust interactive viewing environment that combines defect observations with video, multi-sensor graphs, 3D visualizations color coded to indicate problem areas, and cross sections depicting specific conditions along a pipe.

Existing historical CCTV data can also be incorporated into the ICOM3 viewer.

Example MSI viewer



REMAINING USEFUL LIFE ANALYSIS (RUL) OF PIPELINES INSPECTED

Estimating remaining useful life is a process that takes into account initial life expectancy of the sewer infrastructure and then assesses the current deterioration state and factors that contribute to failure. For purposes of this assessment, observed conditions that lead to structural failures will be the primary consideration. Typically, consideration of in-situ conditions including soil conditions, construction methods, depth of cover, traffic loading, ground water influences, climate consideration such as freeze cycles and capacity assessments also have a significant impact and should also be considered to provide a comprehensive assessment, but are not in scope for this project. For this project, the RUL assessment will focus primarily on the severity and extent of the observed defects affecting the structural integrity of the pipe. It is recommended that this RUL assessment should then be used in conjunction with in situ conditions to determine the overall consequence and probability of failure of the pipelines.

Assessing Failure Modes - Our assessment will evaluate the nature, severity and extent of the pipe conditions, taking into account defects observed in the pipe weighted by a set of deterioration factors known to affect remaining useful life of sewers. The defects will be identified using the PACP coding. The observed defects will be then scored using a damage severity index (DSI). These scores are then weighted using a set of deterioration factors that correlate to the following conditions:

Age Factor - Expected pipe life expectancies will be derived from industry research. For this project, the Canadian Nation Research Council produced a study in 2006 that defined average predicted service life in pipes based on their material type. We propose to use these as the initial basis for life expectancies. Also taken into account are actuarial life expectancy factors (assuming a pipe gets to a certain age, it will last longer than originally expected).

Material Factor - Actual service life of pipes depends significantly on pipe material relative to their environment. Over time, AC pipe undergoes gradual degradation in the form of corrosion (i.e., internal calcium leaching due to conveyed water and/or external leaching due to groundwater). Leaching leads to pipe softening and loss of mechanical strength. Clay pipe is generally impervious to corrosion and erosion but will crack in expansive soils and other unstable ground conditions. Plastic and other non-rigid pipe materials derive most of their structural strength from the surrounding earth.

Cracking Factor - Sewer pipes, when cracked, deteriorate more rapidly than non-cracked pipes from age and also by earth movement. Factors take into consideration known degradation sequences of pipe failures from cracking. These sequences go from tight cracks, to open cracks, to multiple open cracks, to the presence of holes and voids in the pipe wall. While any of these conditions can occur at the same time, we evaluate the extent of the conditions to assess where a pipe is in the deterioration sequence. The nature of the cracking is also considered such as longitudinal cracking, circumferential cracking, and spiral cracking.

Pipe Joint Factor - Joint type is also a significant factor in determining the remaining useful life of sewer pipes. Similar to cracking, joint degradation also sequences. Misaligned and open joints generally are systemic in nature and their presence indicates an accelerated

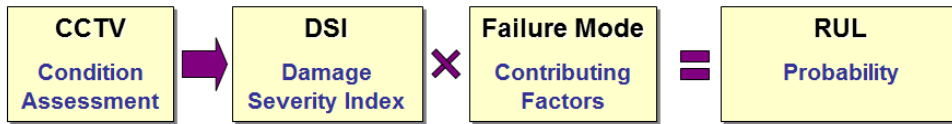
deterioration factor on the pipe. Mortar joints have a much lower life expectancy than flexible joints.

Corrosion / Erosion Factor- This applies to concrete pipe primarily; corrosion does not occur in clay pipes.

Deformation Factor - Applies to plastics and not a factor with clay and concrete small diameter pipes typically.

Configuration Factor - Protruding laterals, flat pipe slope / sags.

The scores are added for each defect in each factor category and the factor is applied. The total score for a pipe segment is determined by the maximum of the combined scores. RedZone Robotics has a RUL formula in use developed from its significant experience in condition assessment and data analysis.



The final RUL results will be presented in the ICOM3 viewer, and shown for each pipe in the final inspection reports.

TOTAL PRICE SUMMARY

The total price for all 43,698 LF of large diameter inspections of 18” – 60” pipelines, including the ICOM3 software viewer, is \$411,370 as summarized below.

Table 1. Schedule of Values

Item/Description	QTY	U/M	Unit Cost	Total Cost
18" - 30" pipe inspection	1	LS		\$ 246,857.50
36" and larger pipe inspection	1	LS		\$ 164,512.00
Report QA/QC & ICOM3 Software Viewer	1	LS	Included	
Remaining Useful Life Analysis	1	LS	Included	
Processing of Standard Reports & GIS Mapping	1	LS	Included	
Total Estimated Cost				\$ 411,370

SUPPLEMENTAL SPECIFICATIONS (Section 1-3)

1. INSPECTION SCOPE OF SERVICES

RedZone Robotic Services shall provide all the labor, equipment, and material to provide the following scope of work services:

REDZONE BUDGET PRICING TO INCLUDE:

- 1.1. RedZone shall provide the RedZone Responder Robot, RAFT, conventional CCTV, and Stand Alone sonar, a trained operating crew, analyst, and the necessary appurtenances to access and collect data for the various size sewers utilizing SONAR technology below the flow line, DIGITAL CCTV and Laser sensors above the flow as required, possible, and or directed.
- 1.2. The scope of work includes the inspection to be completed in one (1) mobilization of each technology used, and one (1) phase using the Responder or FLOAT Robot, Conventional CCTV, or Stand Alone sonar, and a combination of available multi-sensors including Digital CCTV, Laser, Temperature, Gas and Sonar. We will be deploying our robots into insertion points at least 24" in diameter that will be reasonably accessible for our deployment truck and provided by others (cut and put back by others if required). This proposal assumes that there are no structures within the manholes that will block or hinder access of the Responder robot. The Responder platform needs a minimum 24" clear for all access points/manholes.
- 1.3. RedZone shall provide all the necessary computer hardware and software to analyze and present the inspection data in a format easily understood for analysis.
- 1.4. RedZone shall have no work hour restrictions at the deployment site.
- 1.5. RedZone shall only facilitate traffic control and/or permits as required in the designated scope of work areas.

2. PRICE SCHEDULE OF VALUES

2.1. Mobilization / Demobilization

This includes all costs associated with the mobilization and demobilization of the Responder robotic system and equipment, trained engineering technicians and deployment crew.

Access Insertion Set-up

This includes all costs associated with the set-up and insertion of the Responder robotic system into the pipeline to be inspected.

Deployment of MSI System & Data Collection

This includes all labor, equipment and material required to deploy the Responder robotic system and transport any combination of the following sensors including Laser, Sonar, Digital CCTV, H2S gas, and temperature.

Post Processing of Data

This includes all labor, equipment and material required to post process the sensors selected by the purchaser. *General Note - Sonar data is collected depending on flow conditions. The CCTV sensor is used above the flow for continuous coverage for visual observation and defect coding.

Final Report & Software Viewer

An external hard drive that contains all of the analyzed inspection data will be delivered and provided along with the required ICOM3 software to view the data. Separate standard data reports from each sensor will be provided.

NOTE: Schedule of Values

A schedule of values has been provided herein for the scope of work and services to take into consideration the varying pipe and flow conditions and sensors that can be used for data processing in cases where a sensor could not be used or as not directed.

TERMS AND CONDITIONS (BEGIN SECTION 3 THRU 9)

3. DEFINITIONS

- 3.1. Purchaser: The City of Sparks and/or the party responsible for executing RedZone Services Proposal
- 3.2. Seller: RedZone Robotic Services, Inc. (RZS)

4. GENERAL

- 4.1. Insurance: Seller will maintain liability insurance for duration of project naming Purchaser as Cert Holder and Additional Insured. Limits are specified on existing policy.
- 4.2. Terms of Payment: As listed in above proposal.
- 4.3. Liability Limitations: Purchaser shall limit Seller's liability to gross negligence, willful misconduct and breach of contract. Seller shall limit Purchaser's liability to gross negligence, willful misconduct and breach of contract. Breach of contract damages are limited to fees paid.
- 4.4. This proposal expires (30) thirty days from date of proposal.

5. RESPONSIBILITY OF THE PURCHASER OR IT'S REPRESENTATIVES

- 5.1. Access to available system maps, construction plans, flow data, any videotapes, as-builts, maintenance history and or previous inspection data for the pipeline to be inspected.
- 5.2. Information on known problems, designs or conditions within the pipeline to be examined so that proper field procedures can be used, and necessary precautions can be taken during the inspection process to avoid loss of equipment.
- 5.3. Facilitate physical, safe and legal access to manholes needed for deployment to the pipeline to be inspected. Manholes must have 24" clear access. Open any sealed, vented or other non-standard manholes, and reinstall and or reseal them as necessary after the inspection is complete. Locate and expose such manholes as are not visible, not accessible, or are partially or completely covered.

- 5.4. Provide at least 24 in. access suitable for entry of the RESPONDER/MSI robotic system.
- 5.5. Facilitate safe road access to entry access hole for CCTV, support vehicles, and Responder/Float Truck.
- 5.6. Provide access for Responder Truck to entry access hole.
- 5.7. Facilitate provisions for any traffic control necessary for deployment unless otherwise specified in the Inspection Scope of Services.

6. RESPONSIBILITY OF SELLER (RZS)

- 6.1. RZS will provide the RESPONDER large diameter pipe inspection system including the Responder Tracked Robot, the RAFT RedZone Assessment Floating Transport, our conventional CCTV truck, and the Stand Alone Sonar unit, a deployment robotic technician, a deployment robotic engineer, and other deployment technicians, subcontractors, etc., as required. The equipment used will include sensing capabilities and or work attachments as listed in the inspection scope of services.
- 6.2. RZS will provide the necessary computer software to view the inspection data listed in the inspection scope of services in a form for analysis.
- 6.3. Inspection data listed in the inspection scope of services will be delivered as specified in the above listed proposal. RZS will provide the GIS-based ICOM3 software to allow a complete run through of the as-collected data.
- 6.4. Laser, CCTV, Gas, and photographic data can only be collected above the water level. Laser data is generally most accurate when inspecting pipe with a minimum of 30-inch dry head room above the flow.
- 6.5. Sonar data can only be collected under the water level and generally requires a minimum depth of water of 18 inches.
- 6.6. RZS will provide a maximum of one hard copy of our multi-sensor report.

7. PIPELINE INSPECTION PERFORMANCE

- 7.1. Where progress is delayed or halted beyond RZS's control by such causes as, but not limited to: weather, access, traffic, flow, blockage, or others, these circumstances will not be cause for contract termination.
- 7.2. Certain pipeline construction, operating environments, and field conditions may limit, interfere, or prohibit RZS from obtaining data or performing work. Some of these may be, but not limited to, surface access, manhole construction, manhole chamber construction, chamber to pipeline interface, vertical, and or horizontal lay of the pipeline, blind bends, obstructions, debris, lateral connections, flow levels and velocity, transported materials, flow monitors, electrical interference, cables, or other structures or conditions.

- 7.3. If the robot or camera cannot pass through the entire section of the pipeline (blockage, etc.), Contractor at the Purchaser's direction, if possible, shall reset the equipment at a downstream manhole, and attempt to inspect the section from the opposite direction. If the robot/camera again fails to pass through the blocked section, the inspection of that pipe section shall be temporarily suspended.
- 7.4. Temporary delays on start of work, or interim delays, shall not be cause for termination of contract. RZS will provide written notification of any schedule departures.

8. DATA

- 8.1. Purchaser shall receive a report and other deliverables in accordance with the scope of services described above. Except as set forth below, the data and information (the "Data") about Purchaser's pipes, properties and facilities collected or obtained by Seller during the course of performing the Work belongs to and is the confidential and proprietary information of Purchaser. Notwithstanding the foregoing, (i) Seller shall be entitled to retain and use the Data to provide future services to Purchaser and (ii), without disclosing the Data to any third party in an uncompiled fashion or as belonging or relating to Purchaser, Seller may retain, store, use and compile the Data with comparable data from other parties in an aggregate fashion to create a database that Seller may use, process and analyze to provide predictive, diagnostic and other services to other parties.

9. Exclusions

- 9.1 Others to assist in providing a minimum of 24-inch clear access opening for each manhole or entry for access to the system including temporary removal of frame/cover if not full 24-inch opening or grinding of castling frame or MH steps as required.
- 9.2 Unusual or unique access manholes, vaults or shafts for deployment that require non-standard means/methods and or equipment for insertion and inspection purposes.
- 9.3 RedZone excludes all bonds
- 9.4 RedZone excludes prevailing wages
- 9.5 RedZone excludes pipe incline, V-360 (hemispherical imaging technology) and bend radius reports

Acceptance of RedZone Services' Proposal, Special Terms and Conditions

Print name

Date

Signature

This proposal expires in 30 days.