City of Peoria, Arizona
Notice of Request for Proposal
for Professional Services

Request for Proposal No: **P10-0033**

Proposal Due Date: **December 3, 2009**

Services: **TRUNK LINE 15 INCH & LARGER RISK ASSESSMENT PROGRAM**

Proposal Time: 5:00 P.M. AZ Time

Purchasing Agent: **Jennifer Miller**

Project No:

Location: City of Peoria, Materials Management

Phone: (623) 773-7115

Mailing Address: 9875 N.85th Avenue, 2nd floor Peoria, AZ 85345

In accordance with City of Peoria Procurement Code, competitive sealed proposals for the services specified will be received by the City of Peoria Materials Management at the specified location until the date and time cited above. Proposals shall be in the actual possession of the City of Peoria Materials Management on or prior to the exact date and time indicated above. Late proposals will not be considered, except as provided in the City of Peoria Procurement Code. ***Proposals shall be submitted in a sealed envelope with the Request for Proposal number and the offeror's name and address clearly indicated on the front of the envelope.*** All proposals shall be completed in ink or typewritten. Offerors are strongly encouraged to carefully read the ***entire*** Request for Proposal Package.

OFFER

To the City of Peoria: The undersigned, on behalf of the entity, firm, company, partnership, or other legal entity listed below, offers on its behalf to the City a proposal that contains all terms, conditions, specifications and amendments in the Notice of Request for Proposal issued by the City. Any exception to the terms contained in the Notice of Request for Proposal must be specifically indicated in writing and are subject to the approval of the City prior to acceptance. The signature below certifies your understanding and compliance with Paragraph 1 of the City of Peoria Standard Terms and Conditions (form COP 202) contained in the Request for Proposal package issued by the City.

For clarification of this offer contact:

Name: Ronald Ablin, PE

Telephone: 602-567-4000 Fax: 602-567-4001

Brown and Caldwell

Company Name

Authorized Signature for Offer

201 E. Washington Street, Suite 500

Address

Ronald Ablin, PE

Printed Name

Phoenix AZ 85004

City State Zip Code

Vice President

Title

ACCEPTANCE OF OFFER AND CONTRACT AWARD (For City of Peoria Use Only)

Your offer is accepted by the City, subject to approval of each written exception that your proposal contained. The contract consists of the following documents: 1.) Request for Proposal issued by the City; 2.) Your offer in Response to the City's Request for Proposal; and 3.) This written acceptance and contract award.

As the awarded professional service provider, you are now legally bound to provide the services listed by the attached award notice, based on the solicitation of proposals, including all terms, conditions, specifications, amendments and your offer as now accepted by the City. The professional service provider shall not commence any billable work or provide any services under this contract until the professional service provider receives an executed Purchase Order or a Notice to Proceed.

Attested by: Mary Jo Waddell

Mary Jo Waddell, City Clerk

CC: 9C 042010

Contract Number: LCON 04010

Official File:

City of Peoria, Arizona. Effective Date: 4/24/10

Approved as to form:

Stephen M. Kemp, City Attorney

Contract Awarded Date April 23, 2010

Carl Swenson, City Manager

City of Peoria -- Trunk Line Risk Assessment Program

Phase	Phase Description	Loendorf, Thayne A PM	Qualls, Shawntel PA	Ablin, Ronald L PIC	Espriu, Fernando M Field Tech	Steed, Harrison T Engr	Werner, Caren J WP	Simms, Michael J GIS	Gruber, Allison B GIS Tech	Total Labor Hours	Total Labor Effort	Reproduction	Other Travel	Pro Pipe Cost	Total Expense Cost	Total Effort
010	**Project Management**	121	17	22	44	5	11	4	12	**236**	**38,337**	0	500	0	**500**	**38,837**
011	Project Management	96	16	8	0	0	8	0	0	**128**	21,704	0	0	**0**	**0**	**21,704**
012	Project Meetings	10	0	10	4	4	2	4	4	**38**	6,764	0	200	**0**	**200**	**6,964**
013	Data Collection	2	0	0	16	0	0	0	8	**26**	3,370	0	200	**0**	**200**	**3,570**
014	Prioritize Inspections	12	0	4	16	0	0	0	0	**32**	5,036	0	100	**0**	**100**	**5,136**
015	Traffic Control	0	0	0	8	0	0	0	0	**8**	944	0	0	**0**	**0**	**944**
016	FWSP	1	1	0	0	1	1	0	0	**4**	519	0	0	**0**	**0**	**519**
020	**Field Investigation**	60	0	0	370	0	0	0	0	**430**	**54,520**	0	600	240,000	**240,600**	**295,120**
021	Field Reconnaissance	0	0	0	50	0	0	0	0	**50**	5,900	0	300	**0**	**300**	**6,200**
022	CCTV Investigations	60	0	0	320	0	0	0	0	**380**	48,620	0	300	**240,000**	**240,300**	**288,920**
030	**Condition Assessment**	168	0	22	558	248	0	0	0	**996**	**136,340**	0	110	0	**110**	**136,450**
031	Pipeline Assessment	80	0	12	500	80	0	0	0	**672**	87,608	0	0	**0**	**0**	**87,608**
032	Manhole Assessment	8	0	0	10	8	0	0	0	**26**	3,748	0	110	**0**	**110**	**3,858**
033	Identify Rehab Rating	40	0	2	40	80	0	0	0	**162**	23,648	0	0	**0**	**0**	**23,648**
034	Cost Estimate	40	0	8	8	80	0	0	0	**136**	21,336	0	0	**0**	**0**	**21,336**
040	**Technical Memorandum**	32	0	14	0	56	20	20	100	**242**	**36,648**	500	110	0	**610**	**37,258**
041	Draft Memorandum	20	0	8	0	40	12	20	90	**190**	28,580	250	0	**0**	**250**	**28,830**
042	Review Meeting	4	0	4	0	0	1	0	0	**9**	1,799	0	110	**0**	**110**	**1,909**
043	Final memorandum	8	0	2	0	16	7	0	10	**43**	6,269	250	0	**0**	**250**	**6,519**
050	**Data Integration**	40	0	8	40	0	0	28	40	**156**	**24,580**	0	220	0	**220**	**24,800**
051	Granite XP to Hansen	16	0	4	40	0	0	12	0	**72**	10,764	0	110	**0**	**110**	**10,874**
052	Rating to GIS	24	0	4	0	0	0	16	40	**84**	13,816	0	110	**0**	**110**	**13,926**
	GRAND TOTAL	**421**	**17**	**66**	**1,012**	**309**	**31**	**52**	**152**	**2,060**	**290,425**	**500**	**1,540**	**240,000**	**242,040**	**532,465**

EXHIBIT A

CITY OF PEORIA
TRUNK LINE 15-INCH AND LARGER
RISK ASSESSMENT PROGRAM

SCOPE OF WORK

March 2, 2010

The scope of work includes the investigation and assessment for sewer segments 15-inch and larger within the City of Peoria (City). The investigation will include up to 400,000 linear feet (lf) of 15- to 42-inch sanitary sewer pipeline. The purpose of this investigation is to identify the current conditions within the pipelines and recommend future rehabilitation, replacement and reinvestigation needs for the pipeline.

Task 1.0 Project Management

1.1 Project Management. Management of the overall project including staff resources, subconsultants, and client correspondence to assure timely project completion.

- A project schedule will be prepared with milestones agreed to with the City.
- Brown and Caldwell will coordinate the work efforts of the inspection team to ensure that all required permits are obtained and traffic control issues are resolved to facilitate the Closed Circuit Television (CCTV) inspection of the pipelines.
- Detailed monthly invoices will be provided to document all work performed.
- All Project deliverables will be reviewed and edited by Brown and Caldwell for quality assurance prior to submittal to the City.

1.2 Project Meetings.

- A Kickoff Meeting will be held to define milestones, respective responsibilities, and provide for coordination between the City and the inspection team. During this meeting, we will interview City staff to obtain system operational/maintenance information, GIS requirements, data transfer procedures, and requirements for providing updated collection system information.
- Up to four progress meetings will be conducted throughout the project to update the City on the project status and to discuss any issues that may arise during the project execution.
- Meeting minutes will be prepared for all meetings and submitted to all meeting attendees.

1.3 Data Collection. The City will provide the following information, where available, to Brown and Caldwell:

- The existing inventory of the project sewers from the City's quarter section maps and/or GIS database
- Sewer as-built drawings

- Historical CCTV videos
- Maintenance/Repair records
- Historical Manhole inspection logs and photos
- Flow data for the past year for use with field investigations.

1.4 Prioritize Inspections. Using information gathered during the staff interviews and our review of available data and collection system information we will establish the prioritized list for the sewer inspections. We will review the inspection prioritization with City staff and establish a finalized inspection plan. Our inspection team will maintain and provide a 2 to 3 week look-ahead schedule once inspections start to keep the City personnel informed on the location of pending inspections.

1.5 Traffic Control. In general, our inspection team will attempt to access the sewers from manholes requiring minimal traffic control. Where traffic control is needed, the team will obtain all required permits and provide traffic control plans to the City. Traffic control will be performed in accordance with the City's traffic control requirements.

1.6 Field Work Safety Plan. Develop a Field Work Safety Plan (FWSP) for the field inspections to be conducted in accordance with the City's and Occupational Safety and Health Administration requirements. Plan shall include the project summary, key personnel and responsibilities, site specialties, and safety checklists. A copy of the FWSP will be maintained on site with Brown and Caldwell personnel.

Task 2.0 Field Investigation

2.1 Field Reconnaissance. Monthly field reconnaissance investigations will be conducted with the City to review upcoming inspection sites and identify any initial concerns that may impact the completion of the project. During the site visits, manholes will be located and marked with the manhole number. Where buried and/or stuck manholes are encountered, the City shall be responsible for opening and, if required, raising these manholes in order to provide access.

2.2 CCTV Inspections. The CCTV investigations will be conducted by NASSCO PACP certified inspectors to collect data pertaining to the condition of the sewer and identification of specific defects identified. For purposes of this agreement, a total inventory of up to 400,000 linear feet is included.

- The CCTV work will be digitally acquired using Granite XP software using Hansen defect codes and recorded directly to portable hard drives in the inspection vehicles.
- All defects will be identified, viewed and documented in the defect log and photo's will be taken to document defects and general pipeline conditions.
- Any defects that present an eminent danger will be immediately brought to the City's attention within 24 hours of the initial identification.
- The inspection team will attempt to quantify the amount of debris along each pipe segment during the inspections. If there is too much debris in the pipeline to complete an inspection the inspection team will notify the City. The City will be responsible for any cleaning activities required to complete the inspection process.

2.3 Manhole Investigations. The inspection team will provide an initial visual assessment of all manholes used as part of the pipeline investigation. The CCTV camera will also be used to pan the inside of manholes we pass through during the inspection process. Any defects observed within the manholes that present an eminent danger will be immediately brought to the City's attention within 24 hours of the initial identification. Our findings will be summarized in our report.

Task 3.0 Condition Assessment

3.1 Pipeline Condition Assessment. Based on the identified defects, the pipe condition will be assessed using peak and/or total defects. Brown and Caldwell personnel will assign a condition grade for each manhole to manhole segment of sewer pipeline based on a scale of one to five as follows:

Category	Condition	Defect Description	Condition Grade Implication
I	Excellent	Minor Defects	Failure unlikely in the foreseeable future
II	Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years
III	Fair	Moderate defects that will continue to deteriorate	Pipe may fail in 10 to 20 years
IV	Poor	Severe defects that will become Grade 5 defects within the foreseeable future	Pipe will probably fail in 5 to 10 years
V	Immediate Attention	Defects requiring immediate attention	Pipe has failed or will likely fail within the next 5 years

We will make recommendations for additional investigations at the progress meetings which may include sonar and laser if conditions within the pipeline warrant and the additional information is needed to complete rehabilitation recommendations.

3.2 Manhole Condition Assessment We will use the data collected during the pipeline inspections to provide a condition grade for manholes actually viewed. The rating will be based on the following:

Manhole Rehabilitation Rating	Recommended Action
Good	Re-Assess in 5 – 10 years
Fair	Re-Assess in 3 – 5 years
Poor	Rehabilitate in 0 – 5 years

3.3 Identify Rehabilitation Ratings. Brown and Caldwell will develop rehabilitation ratings for each sewer segment inspected. This rehabilitation rating will account for the internal condition assessment and the consequence of failure. The final rating will include a recommendation for rehabilitation/replacement based on the estimated life and potential for failure based solely on observations of the CCTV investigations. We will also make recommendations for future inspections and any operational/maintenance activities that may be required such as root removal and cleaning to remove grease.

3.4 Cost Estimates. Planning level cost estimates will be provided for any future rehabilitation and/or reinvestigation that is recommended as part of the program.

Task 4.0 Technical Memorandum

4.1 Draft Memorandum. A memorandum will be prepared to summarize the results of the condition assessment. The Consultant shall prepare and submit five copies of the draft memorandum for review by the City.

4.2 Review Meeting. The Consultant will attend one review meeting to review City comments for incorporation into the final memorandum.

4.3 Final Memorandum. The Consultant shall incorporate the City's comments and submit five copies of the final memorandum to the City. Copies of all inspection logs, video, and forms will be provided to the City at the completion of the project.

Task 5.0 Data Integration

5.1 Hansen to Granite XP. Brown and Caldwell will work closely with our inspection team to ensure a smooth transition of data between the Hansen Maintenance software and the Granite XP system used to conduct the investigations.

- The inspection team will work directly with City personnel to download the Hansen collection system data to the project hard drive and then upload this data to the Granite XP database in the inspection vehicles. The City will assign work order numbers that will be used by Hansen to track the data.
- At intervals during the inspection to be determined during the Kickoff Meeting the inspection data will be transferred back to the Hansen system.

5.2 Assessment Ratings to GIS. Brown and Caldwell will work closely with the City GIS personnel to ensure a smooth transfer of the condition ratings to the City GIS system.

- Pipeline Condition Grades of 1 to 5 will be assigned for both structural conditions and operational conditions within each segment of pipeline.
- A color code will be assigned to each Condition Grade for display purposes in the GIS system.

Our proposed scope does not include a full manhole investigation, but rather a quick assessment of manholes based upon the view we will have from the CCTV camera located at the invert of the manhole. The cost of a full manhole investigation with complete video of each manhole would cost approximately $67,000.

Trunk-line 15-Inch and Larger Risk Assessment Program

City of Peoria
Solicitation Number P10-0033

January 19, 2010

BROWN AND CALDWELL

Why is Sewer Assessment and Rehabilitation Important?

- Prevent pipeline collapse and overflows
- Impact to traffic, homes, and businesses
- Regulatory violations and fines
- Public perception
- Develop CIP and phase construction costs
- Eliminate inflow/infiltration
- Meet Federal regulations

BROWN AND CALDWELL

January 19, 2010

Structural Failures

- Longitudinal and circumferential cracks
- Holes, sags and collapses
- Protruding services connections
- Joint displacement
- Broken pipes
- Manhole corrosion and frame/cover misalignment due to paving activities
- Inflow/infiltration
- Substandard materials or methods

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January 19, 2010

Operations and Maintenance Failures

- Odor
- Root intrusion
- Solids deposition
- Debris
- Blockages
- Vermin
- Grease
- Surcharging

Large Diameter Sewer Assessment

- Less than 20% of System
- More Difficult Conditions
  - Depth of Flow
  - High Turbulence and Velocities
  - Aggressive Environments
- Require Specialized Equipment and Contractors
  - Lighting
  - Floats/Robotics
- High Consequence of Failure

January 19, 2010

Project Execution Plan

Question 1

Work Process

January 19, 2010

Project Team

Question 1
Project Team Structure

BROWN AND CALDWELL

January 19, 2010

Defining Project Goals

Question 4
Biggest Challenge

- Staff Interviews
  - Priorities/schedule
  - Deliverables
  - Data storage and retrieval
- Attendees
  - Engineering
  - Operations
  - GIS
  - Senior Management
- "End product" dictates approach

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Prioritization

- Known problem areas
- Critical line segments
- High profile areas
- Pipe age
- Pipe type
- Investigation limitations
  - Community events
  - Construction activities
  - Time of day
  - Manhole access

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Pre-Investigation Planning

- Lines of communication
- Data download
- Site access investigation
  - Locating
  - Marking
  - Identifying inaccessible locations
- Health and safety plan
- Permits
- Document procedures

Closed Circuit Television (CCTV)

- Most Commonly Used Methodology
- Pan and Tilt Cameras
  - Defect Identification
  - Period Documentation of Conditions
- Crawlers or Floats
- Keys to Success
  - Adequate Lighting
  - Good Operators
  - Detailed Expectations

January 19, 2010

Sonar Investigations

- Below the Water Surface
  - Deposition
  - Invert Erosion
  - Pipe Ovality
- Uses
  - Siphons
  - High Flow Pipelines
  - Quantify Deposition
- Eliminates Need for Bypass Pumping

Standards Ensure Quality

Question 8
CCTV Standards

- NASSCO inspection standards
  - Standardized CCTV coding system
  - Certified inspectors
  - Uniform scoring matrix
  - Defects assigned a score of 1 to 5
  - Scores based on potential for further deterioration or failure
  - Structural and O&M defect scores

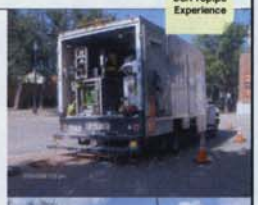
Qualified and Experienced Field Crews Provide the Base Information for a Successful Project

January 19, 2010

Prior CCTV Experience

Question 10/11
BC/Propipe Experience

- 15 years of experience
- Over 400 miles of investigation in Arizona
- 22 programs
- Similar programs for Phoenix, Mesa, Tempe, Pima County, Winslow, Bisbee and Prescott
- CCTV, laser, sonar, pipeline cleaning and manhole investigations



Field Coordination

Question 12
Field Coordination

- Work orders generated by Hansen
- Submit two week look ahead
- Periodic BC review of field activities
- Data transferred using external hard drives

January 19, 2010

Field Work Challenges

Question 13

Field Work Challenges

- Data glitches
  - Unidentified assets
  - Incorrect information
- Incomplete inspections due to debris
  - Notify BC
  - BC notify City
  - Two pass clean by City or Pro-Pipe
  - Conduct inspection

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Emergency Procedure

Question 7

Emergency Procedure

- SSO Emergency
  - Immediate contact between ProPipe, City Emergency Crews and BC
  - Implement measures to stop SSO and provide cleanup help if required

- Major Defect with potential for SSO
  - ProPipe will notify BC immediately
  - BC will be in the field to view the problem within the hour
  - BC will assess the problem and present the City with viable options within 24 hours

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Data Review

- Weekly Review
- Reviewed for accuracy and completeness
- Initial Defect Rating
- Rework as required
- Entered into database
  - easy tracking
  - upload to GIS

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Pipe Material Clues

Question 9

Pipe Material Clues

- GIS data
- As-built drawings
- Distance between joints
- View of the joint
- Color and texture
- View of the pipe at laterals and manhole
- Types of defects

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Condition Assessment

- Review field data
- Evaluation conditions
- Operational conditions - blockage and loss of capacity
- Structural conditions - external loading, remaining wall thickness, defect location
- Final segment rating (both operational and structural)

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January 19, 2010

Peoria Rating Table

Rating	Condition	Condition Rating for Corrosion Severity	Implication
1	Excellent	Minor Defects	Failure unlikely in the foreseeable future
2	Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years
3	Fair	Moderate defects that will continue to deteriorate	Pipe may fail in 10 to 20 years
4	Poor	Severe defects that will become Grade 5 defects within the foreseeable future	Pipe will probable fail in 5 to 10 years
5	Immediate Attention	Defects requiring immediate attention	Pipe has failed or will likely fail within the next 5 years

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Pipeline Criticality

- Higher criticality pipelines typically include:

Major interceptor sewers

January 19, 2010

Rehabilitation Recommendations

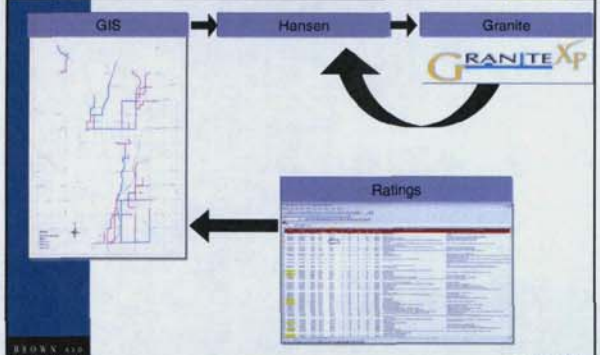
- Segments combined into logical rehabilitation projects
- Rehabilitation projects are prioritized into four levels:
  - Level A: Immediate attention within 1 to 3 years
  - Level B: Major rehabilitation within 3 to 5 years
  - Level C: Potential Rehabilitation and Re-investigation within 5 to 7 years
  - Level D: Good condition with re-evaluation in 5 years

January 19, 2010

Data Transfer

Question 6

Data Transfer



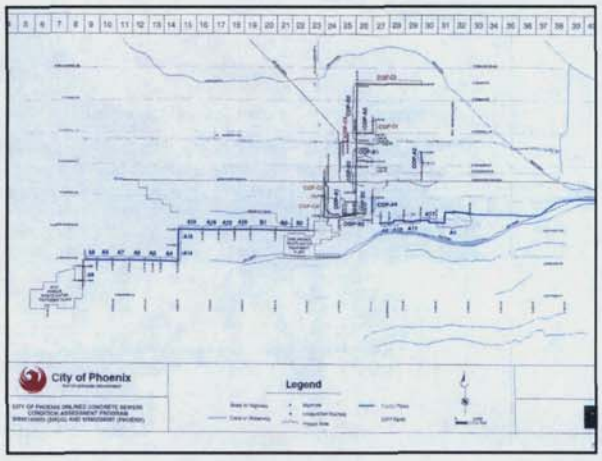
January 19, 2010

TABLE ES-1
SUMMARY OF SEWER REHABILITATION COSTS - 50ING PROJECTS
(BEYOND 4/30/95 IMD)

Project No.	Year[1]	Location	Total Length (feet)[2]	Min Pipe Dia (in)	Max Pipe Dia (in)	Construction Cost[3]	Engineering Cost[3]	Construction Administration Cost[3]	Total Rehabilitation Cost	Total Rehabilitation Cost Adjusted for Year of Occupation[1]
A1	93-94	Vicinity of I-205/17 Interchange & E. Watkins	6,581	48	84	$ 10,715,000	$ 896,000	$ 169,000	$ 11,780,000	$ 11,780,000
A2	93-94	W. Watkins, Central to 3rd Drive	1,278	60	84	$ 2,073,000	$ 73,000	$ 143,000	$ 2,861,000	$ 2,861,000
A3	93-94	Broadway Road, 75th to 78th Avenue	2,437	81	84	$ 2,315,000	$ 225,000	$ 370,000	$ 2,910,000	$ 2,910,000
A4	93-94	Broadway Road, 59th to 63rd Avenue	3,784	60	84	$ 2,500,000	$ 50,000	$ 200,000	$ 2,750,000	$ 2,750,000
A5	93-94	Broadway Road, 63rd to 67th Avenue	2,487	60	84	$ 2,050,000	$ 25,000	$ 100,000	$ 2,212,000	$ 2,212,000
A6	93-94	Broadway Road, 67th to 71st Avenue	2,582	60	84	$ 2,050,000	$ 25,000	$ 100,000	$ 2,212,000	$ 2,212,000
A7	93-94	Broadway Road, 71st to 75th Avenue	3,663	60	84	$ 2,500,000	$ 50,000	$ 200,000	$ 2,750,000	$ 2,750,000
A8	93-94	Broadway Road, 78th to 83rd Avenue	3,034	60	84	$ 2,500,000	$ 125,000	$ 250,000	$ 2,900,000	$ 2,900,000
A9	93-94	83rd Ave., interbedded pipe, tube interceptors	4,821	72	72	$ 1,600,000	$ 25,000	$ 170,000	$ 1,795,000	$ 1,795,000
A10	93-94	E. Watkins, 7th Street to Central	2,740	48	48	$ 2,700,000	$ 225,000	$ 140,000	$ 3,075,000	$ 3,075,000
A11	93-94	Annette path, 7th Street to 12th Street	1,651	48	48	$ 1,525,000	$ 225,000	$ 140,000	$ 1,865,000	$ 1,865,000
A12	93-94	Lower Sunbeam Road, 45th to 49th Avenue	1,424	87	87	$ 1,200,000	$ 300,000	$ 140,000	$ 1,640,000	$ 1,640,000
A13	93-94	49th Ave. Lower Sunbeam to Elwood	1,676	81	81	$ 1,600,000	$ 300,000	$ 140,000	$ 2,040,000	$ 2,040,000
A14	93-94	49th Ave. Elwood to Broadway	1,396	81	81	$ 1,600,000	$ 300,000	$ 140,000	$ 2,040,000	$ 2,040,000
A15	93-94	Lower Sunbeam Road, 33rd to 38th Avenue	1,008	87	87	$ 1,900,000	$ 275,000	$ 170,000	$ 2,345,000	$ 2,345,000
A16	93-94	Lower Sunbeam Road, 49th to 53rd Avenue	1,396	87	87	$ 1,800,000	$ 350,000	$ 140,000	$ 2,290,000	$ 2,290,000
A17	93-94	E Watkins, 12th to 14th Street	1,966	48	48	$ 1,700,000	$ 225,000	$ 140,000	$ 2,075,000	$ 2,075,000
A18	93-94	Lower Sunbeam Road, 41st to 45th Avenue	1,398	81	87	$ 1,700,000	$ 225,000	$ 140,000	$ 2,075,000	$ 2,075,000
SUBTOTAL			35,152			$ 32,865,000	$ 3,925,000	$ 2,991,000	$ 39,480,000	$ 39,480,000
B1	93-94	Lower Sunbeam, 25th to 41st Avenue	3,557	81	81	$ 6,500,000	$ 625,000	$ 440,000	$ 7,565,000	$ 7,565,000
B2	93-94	Lower Sunbeam, 17th to 41st Avenue	3,607	81	81	$ 6,000,000	$ 350,000	$ 440,000	$ 6,790,000	$ 6,790,000
B3	93-94	Lower Sunbeam, 41st to 49th Avenue	1,672	81	81	$ 4,000,000	$ 350,000	$ 440,000	$ 4,790,000	$ 4,790,000
SUBTOTAL			8,836			$ 17,500,000	$ 725,000	$ 880,000	$ 19,045,000	$ 19,045,000
C1	96-97	Crossing Fanno Road to Tongue	1,578	54	54	$ 1,300,000	$ 75,000	$ 50,000	$ 1,425,000	$ 1,401,111
C2	96-97	Miller to east of Fanno to Tongue	1,692	54	54	$ 2,500,000	$ 100,000	$ 75,000	$ 2,675,000	$ 2,596,017
SUBTOTAL			4,018			$ 3,800,000	$175,000	$125,000	$ 4,100,000	$ 3,977,700
TOTAL			48,006			$ 53,165,000	$ 4,825,000	$ 3,996,000	$ 61,625,000	$ 62,501,700

1. Recommended fiscal year for completion
2. Includes 5 percent annual inflation
3. Shaded area indicate project completed or in progress. Light shading indicates actual costs contracted and darker shading an estimate
4. Lengths shown are proposed lengths. Installed lengths may vary slightly

BROWN AND CALDWELL



City Coordination

Question 5

City Coordination

- Initial staff interviews
- Identification of priority projects
- Manhole access investigation
- Review of emergency projects
- Monthly status meetings
- Criticality
- Rehabilitation Recommendations
- Review of final report

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Project Budget/Timeline

Question 4

Project Budget and Timeline

- $250,000 – FY 2010
- $260,000 – FY 2011
- Define desired results
- Keep it simple
  - Get initial data
  - Define additional inspections that may be required
- Prioritize investigations if funding is not adequate
- Schedule

BROWN AND CALDWELL

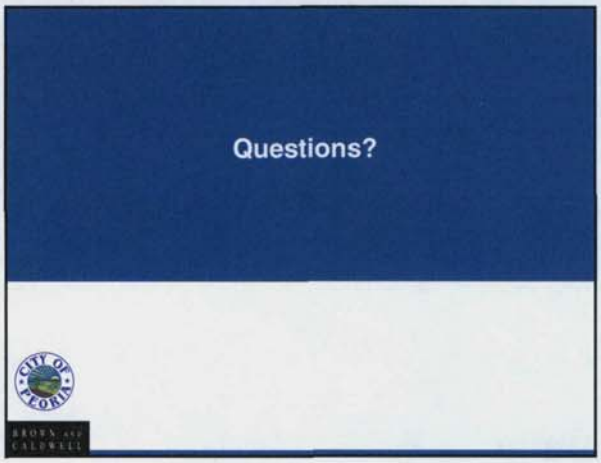
January 19, 2010

Why BC/Propipe

- Local, experienced team of sewer specialists
- Extensive large diameter experience
- An understanding of Arizona sewer conditions
- Proven approach
- Experience with Hansen/Granite XP
- Dedicated staff
- Immediate response team

BROWN AND CALDWELL

January 19, 2010


Questions?
CITY OF PEORIA
BROWN AND CALDWELL

SOLICITATION AMENDMENT

Solicitation No:	P10-0033
Description:	TrunkLine Risk Assessment
Amendment No:	One (1)
Solicitation Due Date:	December 15, 2009
Solicitation Due Time:	5:00 p.m.

Materials Management Procurement
9875 N. 85th Ave., 2nd Fl.
Peoria, Arizona 85345-6560
Telephone: (623) 773-7115
Fax: (623) 773-7118

Buyer: Jennifer Miller

A signed copy of this Amendment shall be received by the City of Peoria, Materials Management no later than the Solicitation Due Date and Time.

The solicitation due date has been extended from December 3, 2009 to December 15, 2009. The time remains the same at 5:00 p.m. local time.

Page 1 of the solicitation shall be deleted and replaced with the attached Page 1.

Special Terms and Conditions, Item 12. d, Cost Considerations shall be deleted.

Price Sheet pages 25, 26 and 27 shall be deleted.

Scope of Work, Page 21, Item 2.8: Delete the last sentence of paragraph 2.8.

All other provisions of this Solicitation shall remain in their entirety.

Vendor hereby acknowledges receipt and agreement with the amendment.

12/15/09
Signature Date

Ronald Ablin, PE, Vice President
Typed Name and Title

Brown and Caldwell
Company Name

201 E. Washington Street, Suite 500
Address

Phoenix AZ 85004
City State Zip

The above referenced Solicitation Amendment is hereby Executed

11/20/09

at Peoria, Arizona

Jennifer Miller, CPPB
Contract Officer

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COP 207 (02/01/08)HFK

REQUEST FOR PROPOSAL

INSTRUCTIONS TO OFFEROR

Materials Management Procurement
8314 West Cinnabar Street
Peoria, Arizona 85345-6560
Phone: (623) 773-7115
Fax: (623) 773-7118

1. **PREPARATION OF PROPOSAL:**
   a. All proposals shall be on the forms (if any) provided in this *Request For Proposal* package . It is permissible to copy these forms if required. Telegraphic (facsimile) or mailgram proposals will not be considered.
   b. The Offer and Contract Award document (COP Form 203) shall be submitted with an original ink signature by a person authorized to sign the offer.
   c. Erasures, interlineations, or other modifications in the proposal shall be initialed in original ink by the authorized person signing the Offer sheet.
   d. If price is a consideration and in case of error in the extension of prices in the proposal, the unit price shall govern. No proposal shall be altered, amended, or withdrawn after the specified proposal due date and time.
   e. Periods of time, stated as a number of days, shall be calendar days.
   f. It is the responsibility of all Offerors to examine the entire *Request For Proposal* package and seek clarification of any item or requirement that may not be clear and to check all responses for accuracy before submitting a bid. Negligence in preparing a Proposal confers no right of withdrawal after proposal due date and time.

2. **INQUIRIES:** Any question related to the *Request For Proposal* shall be directed to the purchasing agent whose name appears on the front. The Offeror shall not contact or ask questions of the department for which the requirement is being procured. Questions should be submitted in writing when time permits. The purchasing agent may require any and all questions be submitted in writing at the Buyer's sole discretion. Any correspondence related to a *Request For Proposal* should refer to the appropriate *Request For Proposal* number, page, and paragraph number. However, the Offeror shall not place the *Request For Proposal* number on the outside of any envelope containing questions since such an envelope may be identified as a sealed proposal and, if so, will not be opened until after the official *Request For Proposal* due date and time.

3. **PROSPECTIVE OFFERORS CONFERENCE:** A prospective offerors conference may be held. If scheduled, the date and time of this conference will be indicated within this document. The purpose of this conference will be to clarify the contents of this *Request For Proposal* in order to prevent any misunderstanding of the City's position. Any doubt as to the requirements of this *Request For Proposal* or any apparent omission or discrepancy should be presented to the City at this conference. The City will then determine if any action is necessary and may issue a written amendment to the *Request for Proposal*. Oral statements or instructions will not constitute an amendment to this *Request for Proposal*.

4. **LATE PROPOSALS:** Late Proposals will not be considered, except as provided by the **City of Peoria Procurement Code**. A professional service provider submitting a late proposal shall be so notified.

5. **WITHDRAWAL OF PROPOSAL:** At any time prior to the specified proposal due date and time, a professional service provider (or designated representative) may withdraw the proposal. Telegraphic (facsimile) or mailgram proposal withdrawals will not be considered.

6. **AMENDMENT OF PROPOSAL:** Receipt of a Solicitation Amendment (COP Form 207) shall be acknowledged by signing and returning the document prior to the specified proposal due date and time.

7. **PAYMENT:** The City will make every effort to process payment for the purchase of services within thirty (30) calendar days after receipt of services and a correct notice of amount due, unless a good faith dispute exists as to any obligation to pay all or a portion of the account. Any proposal that requires payment in less than thirty (30) calendar days shall not be considered.

8. **DISCOUNTS:** Payment discount periods will be computed from the date of receipt of service or correct invoice, whichever is later, to the date Buyer's payment is mailed. Unless freight and other charges are itemized, any discount provided will be taken on full amount of invoice. Payment discounts of thirty (30) calendar days or more will be deducted from the proposal price in determining the low bid. However, the Buyer shall be entitled to take advantage of any payment discount offered by the Offeror provided payment is made within the discount period.

9. **TAXES:** The City of Peoria is exempt from Federal Excise Tax, including the Federal Transportation Tax. Sales tax, if any, shall be indicated as a separate item.

10. **VENDOR REGISTRATION:** After the award of a contract, the successful Offeror shall have a completed Vendor Registration Form (COP Form 200) on file with the City of Peoria Materials Management Division.

11. **AWARD OF CONTRACT:**

    a. Notwithstanding any other provision of this *Request For Proposal*, The City expressly reserves the right to:

       (1) Waive any immaterial defect or informality: or
       (2) Reject any or all proposals, or portions thereof, or
       (3) Reissue a *Request For Proposal*.

    b. A response to a *Request For Proposal* is an offer to contract with the City based upon the terms, conditions and specifications contained in the City's *Request For Proposal* and the written amendments thereto, if any. Proposals do not become contracts unless and until they are accepted by the **City Council**. A contract is formed when written notice of award(s) is provided to the successful Offeror(s). The contract has its inception in the award document, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the procurement contract are contained in the *Request For Proposal*; unless modified by a Solicitation Amendment (COP Form 207) or a Contract Amendment (COP Form 217).

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STANDARD TERMS AND CONDITIONS

Materials Management Procurement
8314 West Cinnabar Street
Peoria, Arizona 85345-6560
Phone: (623) 773-7115
Fax: (623) 773-7118

THE FOLLOWING TERMS AND CONDITIONS ARE AN EXPLICIT PART OF THE SOLICITATION AND ANY RESULTANT CONTRACT.

1. **CERTIFICATION:** By signature in the Offer section of the Offer and Contract Award page (COP Form 203), the Professional Services Provider, (Consultant), certifies:

   a. The submission of the offer did not involve collusion or other anti-competitive practices.

   b. The Consultant shall not discriminate against any employee or applicant for employment in violation of Federal Executive Order 11456.

   c. The Consultant has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip favor, or service to a public servant in connection with the submitted offer. Failure to sign the offer, or signing it with a false statement, shall void the submitted offer or any resulting contracts, and the Consultant may be debarred.

2. **GRATUITIES:** The City may, by written notice to the Consultant, cancel this contract if it is found by the City that gratuities, in the form of entertainment, gifts or otherwise, were offered or given by the Consultant or any agent or representative of the Consultant, to any officer or employee of the City with a view toward securing an order, securing favorable treatment with respect to the awarding, amending, or the making of any determinations with respect to the performing of such order. In the event this contract is cancelled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold from the Consultant the amount of the gratuity. Paying the expense of normal business meals which are generally made available to all eligible city government customers shall not be prohibited by this paragraph.

3. **APPLICABLE LAW:** In the performance of this agreement, contractors shall abide by and conform to any and all laws of the United States, State of Arizona and City of Peoria including but not limited to federal and state executive orders providing for equal employment and procurement opportunities, the Federal Occupational Safety and Health Act and any other federal or state laws applicable to this agreement.

   Contractor specifically understands and acknowledges the applicability to it of the Americans with Disabilities Act, the Immigration Reform and Control Act of 1986, and the Drug Free Workplace Act of 1989. In addition, if this agreement pertains to construction, Contractor must also comply with A.R.S. § 34-301, as amended (Employment of Aliens on Public Works Prohibited) and A.R.S. § 34-302, as amended (Residence Requirements for Employees).

   Under the provisions of A.R.S. § 41-4401, Contractor hereby warrants to the City that Contractor and each of its subcontractors ("Subcontractors") will comply with, and are contractually obligated to comply with, all Federal immigration laws and regulations that relate to their employees and A.R.S. § 23-214(A) (hereinafter, "Contractor Immigration Warranty").

   A breach of the Contractor Immigration Warranty shall constitute a material breach of this agreement and shall subject Contractor to penalties up to and including termination of this agreement at the sole discretion of the City. The City may, at its sole discretion, conduct random verification of the employment records of Contractor and any Subcontractors to ensure compliance with the Contractor Immigration Warranty. Contractor agrees to assist the City in regard to any random verifications performed.

   Neither Contractor nor any Subcontractor shall be deemed to have materially breached the Contractor Immigration Warranty if Contractor or the Subcontractor establishes that it has complied with the employment verification provisions prescribed by §§ 274A and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. §23-214(A).

   The provisions of this Paragraph must be included in any contract Contractor enters into with any Subcontractors who

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provide services under this agreement or any subcontract. "Services" is defined as furnishing labor, time or effort in the State of Arizona by a contractor or subcontractor. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

Contractor warrants, for the term of this agreement and for six months thereafter, that is has fully complied with the requirements of the Immigration Reform and Control Act of 1986 and all related or similar legal authorities.

This contract shall be governed by the City and Contractor shall have all remedies afforded each by the Uniform Commercial Code, as adopted in the State of Arizona, except as otherwise provided in this contract or in statutes pertaining specifically to the City. This contract shall be governed by the laws of the State of Arizona and suit pertaining to this contract may be brought only in courts in the State of Arizona.

This contract is subject to the provisions of ARS §38-511; the City may cancel this contract without penalty or further obligations by the City or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the City or any of its departments or agencies, is at any time while the contract or any extension of the contract is in effect, an employee of any other party to the contract in any capacity or a consultant to any other party of the contract with respect to the subject matter of the contract.

4. **LEGAL REMEDIES:** All claims and controversies shall be subject to resolution according to the terms of the City of Peoria Procurement Code.

5. **CONTRACT:** The contract between the City and the Consultant shall consist of (1) the Solicitation, including instructions, all terms and conditions, specifications, scopes of work, attachments, and any amendments thereto, and (2) the offer submitted by the Consultant in response to the solicitation. In the event of a conflict in language between the Solicitation and the Offer, the provisions and requirements in the Solicitation shall govern. However, the City reserves the right to clarify, in writing, any contractual terms with the concurrence of the Consultant, and such written contract shall govern in case of conflict with the applicable requirements stated in the Solicitation or the Consultant's offer. The Solicitation shall govern in all other matters not affected by the written contract.

6. **CONTRACT AMENDMENTS:** This contract may be modified only by a written Contract Amendment (COP Form 217) signed by persons duly authorized to enter into contracts on behalf of the City and the Consultant.

7. **CONTRACT APPLICABILITY:** The Offeror shall substantially conform to the terms, conditions, specifications and other requirements found within the text of this specific Solicitation. All previous agreements, contracts, or other documents, which have been executed between the Offeror and the City are not applicable to this Solicitation or any resultant contract.

8. **PROVISIONS REQUIRED BY LAW:** Each and every provision of law and any clause required by law to be in the contract will be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the contract will forthwith be physically amended to make such insertion or correction.

9. **SEVERABILITY:** The provisions of this contract are severable to the extent that any provision or application held to be invalid shall not affect any other provision or application of the contract which may remain in effect without the invalid provision or application.

10. **RELATIONSHIP TO PARTIES:** It is clearly understood that each party will act in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other. An employee or agent of one party shall not be deemed or construed to be the employee or agent of the other for any purpose whatsoever. The Consultant is advised that taxes or Social Security payments will not be withheld from any City payments issued hereunder and that the Consultant should make arrangements to directly pay such expenses, if any.

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11. **INTERPRETATION-PAROL EVIDENCE:** This contract represents the entire agreement of the Parties with respect to its subject matter, and all previous agreements, whether oral or written, entered into prior to this contract are hereby revoked and superseded by this contract. No representations, warranties, inducements or oral agreements have been made by any of the Parties except as expressly set forth herein, or in any other contemporaneous written agreement executed for the purposes of carrying out the provisions of this contact. This contract may not be changed, modified or rescinded except as provided for herein, absent a written agreement signed by both Parties. Any attempt at oral modification of this contract shall be void and of no effect.

12. **NO DELEGATION OR ASSIGNMENT:** Contractor shall not delegate any duty under this Contract, and no right or interest in this Contract shall be assigned by Contractor to any successor entity or third party, including but not limited to an affiliated successor or purchaser of Contractor or its assets, without prior written permission of the City. The City, at its option, may cancel this Contract in the event Contractor undertakes a delegation or assignment without first obtaining the City's written approval. Contractor agrees and acknowledges that it would not be unreasonable for the City to decline to approve a delegation or assignment that results in a material change to the services provided under this Contract or an increased cost to the City.

13. **SUBCONTRACTS:** No subcontract shall be entered into by the Consultant with any other party to furnish any of the material, service or construction specified herein without the advance written approval of the City. The prime Consultant shall itemize all sub-contractors which shall be utilized on the project. Any substitution of sub-contractors by the prime Consultant shall be approved by the City and any cost savings will be reduced from the prime Consultant's bid amount. All subcontracts shall comply with Federal and State laws and regulations which are applicable to the services covered by the subcontract and shall include all the terms and conditions set forth herein which shall apply with equal force to the subcontract and if the Subcontractor were the Consultant referred to herein. The Consultant is responsible for contract performance whether or not Subcontractors are used.

14. **RIGHTS AND REMEDIES:** No provision in this document or in the Consultant's offer shall be construed, expressly or by implication, as waiver by the City of any existing or future right and/or remedy available by law in the event of any claim of default or breach of contract. The failure of the City to insist upon the strict performance of any term or condition of the contract or to exercise or delay the exercise of any right or remedy provided in the contract, or by law, or the City's acceptance of and payment for materials or services, shall not release the Consultant from any responsibilities or obligations imposed by this contract or by law, and shall not be deemed a waiver of any right of the City to insist upon the strict performance of the Contract.

15. **INDEMNIFICATION:** To the fullest extent permitted by law, the Consultant shall defend, indemnify and hold harmless the City, its agents, representatives, officers, directors, officials and employees for costs or damages for which the Consultant is legally responsible or for which the City is vicariously liable on account of the Consultant's willful or negligent acts, error or omissions.

    The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

16. **OVERCHARGES BY ANTITRUST VIOLATIONS:** The City maintains that, in practice, overcharges resulting from antitrust violations are borne by the purchaser. Therefore, to the extent permitted by law, the Consultant hereby assigns to the City any and all claims for such overcharges as to the goods and services used to fulfill the Contract.

17. **FORCE MAJEURE:** Except for payment for sums due, neither party shall be liable to the other nor deemed in default under this Contract if and to the extent that such party's performance of this Contract is prevented by reason of force Majeure. The term *"force majeure"* means an occurrence that is beyond the control of the party affected and occurs without its fault or negligence. Without limiting the foregoing, force majeure includes acts of God: acts of the public enemy; war; acts of terror, hate crimes affecting public order; riots; strikes; mobilization; labor disputes; civil disorders; fire; floods;

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lockouts, injunctions-intervention-acts, or failures or refusals to act by government authority; events or obstacles resulting from a governmental authority's response to the foregoing; and other similar occurrences beyond the control of the party declaring force majeure which such party is unable to prevent by exercising reasonable diligence. The force majeure shall be deemed to commence when the party declaring force majeure notifies the other party of the existence of the force majeure and shall be deemed to continue as long as the results or effects of the force majeure prevent the party from resuming performance in accordance with this Contract.

Force majeure shall not include the following occurrences:

a. Last minute failure of office equipment is not force majeure.

b. Late performance by a subcontractor unless the delay arises out of a force majeure occurrence in accordance with this Force Majeure term and Condition.

Any delay or failure in performance by either party hereto shall not constitute default hereunder or give rise to any claim for damages or loss of anticipated profits if, and to the extent that such delay or failure is caused by force majeure. If either party is delayed at any time in the progress of the work by force majeure, then the delayed party shall notify the other party in writing of such delay within forty-eight (48) hours commencement thereof and shall specify the causes of such delay in such notice. Such notice shall be hand delivered or mailed *Certified-Return Receipt* and shall make a specific reference to this article, thereby invoking its provisions. The delayed party shall cause such delay to cease as soon as practicable and shall notify the other party in writing. The time of completion shall be extended by contract modification for a period of time equal to the time that the results or effects of such delay prevent the delayed party from performing in accordance with this contract.

18. **RIGHT TO ASSURANCE:** Whenever one party to this contract in good faith has reason to question the other party's intent to perform he may demand that the other party give a written assurance of this intent to perform. In the event that a demand is made and no written assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the Contract.

19. **RIGHT TO AUDIT RECORDS:** The City may, at reasonable times and places, audit the books and records of any Contractor as related to any contract held with the City. This right to audit also empowers the City to inspect the papers of any Contractor or Subcontractor employee who works on this contract to ensure that the Contractor or Subcontractor is complying with the Contractor Immigration Warranty made pursuant to Paragraph 3 above.

20. **RIGHT TO INSPECT:** The City may, at reasonable times, inspect the part of the place of business of a Consultant or Subcontractor which is related to the performance of any contract as awarded or to be awarded.

21. **WARRANTIES:** Consultant warrants that all services delivered under this contract shall conform to the specifications of this contract. Consultant warrants that all services shall be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances. Additional warranty requirements may be set forth in the solicitation.

22. **INSPECTION:** All services are subject to final inspection and acceptance by the City. Services failing to conform to the specifications of this Contract will be held at Consultant's risk and may be returned to the Consultant. If so returned, all costs are the responsibility of the Consultant. The City may elect to do any or all:

    a. Waive the non-conformance.

    b. Stop the work immediately.

    c. Bring material into compliance.

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This shall be accomplished by a written determination for the City.

23. **TITLE AND RISK OF LOSS:** The title and risk of loss of service shall not pass to the City until the City actually receives the service at the point of delivery, unless otherwise provided within this Contract.

24. **NO REPLACEMENT OF DEFECTIVE TENDER:** Every tender of materials shall fully comply with all provisions of the Contract. If a tender is made which does not fully conform, this shall constitute a breach of the Contract as a whole.

25. **DEFAULT IN ONE INSTALLMENT TO CONSTITUTE TOTAL BREACH:** Consultant shall deliver conforming materials in each installment of lot of this Contract and may not substitute nonconforming materials. Delivery of nonconforming materials or a default of any nature, at the option of the City, shall constitute a breach of the Contract as a whole.

26. **LICENSES:** Consultant shall maintain in current status all Federal, State and Local licenses and permits required for the operation of the business conducted by the Consultant as applicable to this Contract.

27. **PATENTS AND COPYRIGHTS:** All services, information, computer program elements, reports and other deliverables, which may be patented or copyrighted and created under this contract are the property of the City and shall not be used or released by the Consultant or any other person except with the prior written permission of the City.

28. **PREPARATION OF SPECIFICATIONS BY PERSONS OTHER THAN CITY PERSONNEL:** All specifications shall seek to promote overall economy for the purposes intended and encourage competition and not be unduly restrictive in satisfying the City's needs. No person preparing specifications shall receive any direct or indirect benefit from the utilization of specifications, other than fees paid for the preparation of specifications.

29. **COST OF PROPOSAL PREPARATION:** The City shall not reimburse the cost of developing presenting or providing any response to this solicitation. Offers submitted for consideration should be prepared simply and economically, providing adequate information in a straightforward and concise manner.

30. **PUBLIC RECORD:** All offers submitted in response to this solicitation shall become the property of the City and shall become a matter of public record available for review, subsequent to the award notification, in accordance with the City's Procurement Code. However, subsequent to the award of the contract, any information and documents obtained by the City during the course of an audit conducted in accordance with Paragraph 19 above for the purpose of determining compliance by Contractor or a Subcontractor with the Contractor Immigration Warranty mandated by Paragraph 3 above shall remain confidential and shall not be made available for public review or produced in response to a public records request, unless the City is ordered or otherwise directed to do so by a court of competent jurisdiction.

31. **ADVERTISING:** Consultant shall not advertise or publish information concerning this Contract, without prior written consent of the City.

32. **DELIVERY ORDERS:** The City shall issue a Purchase Order for the services covered by this contract. All such documents shall reference the contract number as indicated on the Offer and Contract Award (COP Form 203).

33. **FUNDING:** Any contract entered into by the City of Peoria is subject to funding availability. Fiscal years for the City of Peoria are July 1 to June 30. The City Council approves all budget requests. If a specific funding request is not approved, the contract shall be terminated.

34. **DISCLAIMER:** The City of Peoria, Arizona provides current and complete solicitation information for registered Plan Holders only. Updates, amendments and related information regarding the solicitation contained herein will be delivered only to registered Plan Holders. The City assumes no liability or duty to so update or send any update to persons who are

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not Plan Holders. Any person who acquires these documents from any source other than the City website or directly from the Materials Management Division, has no assurance that the solicitation is valid. No person may amend this document, nor may any person publish it without this disclaimer.

35. **PAYMENT:** A separate invoice shall be issued for each service performed, and no payment will be issued prior to receipt of services and correct invoice.

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SPECIAL TERMS AND CONDITIONS

Solicitation Number: **P10-0033**

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1. **Purpose:** Pursuant to provisions of the City Procurement Code, the City of Peoria, Materials Management Division intends to establish a contract for **Consulting Services for Risk Assessment Program of Trunkline 15 inch and larger**.

2. **Authority:** This Solicitation as well as any resultant contract is issued under the authority of the City. No alteration of any resultant contract may be made without the express written approval of the City Materials Manager in the form of an official contract amendment. Any attempt to alter any contract without such approval is a violation of the contract and the City Procurement Code. Any such action is subject to the legal and contractual remedies available to the City inclusive of, but not limited to, contract cancellation, suspension and/or debarment of the Consultant.

3. **Offer Acceptance Period:** In order to allow for an adequate evaluation, the City requires an offer in response to this Solicitation to be valid and irrevocable for sixty (60) days after the opening time and date.

4. **Eligible Agencies:** Any contract resulting from this Solicitation shall be for the exclusive use of the City of Peoria.

5. **Contract Type:** Fixed Price

6. **Term of Contract:** The term of any resultant contract shall commence on the date of award and shall continue for a period of two (2) years thereafter, unless terminated, cancelled or extended as otherwise provided herein.

7. **Contract Extension:** By mutual written contract amendment, any resultant contract may be extended for supplemental periods of up to a maximum of twelve (12) months.

8. **Affirmative Action:** It is the policy of the City of Peoria that suppliers of goods or services to the City adhere to a policy of equal employment opportunity and demonstrate an affirmative effort to recruit, hire, and promote regardless of race, color, religion, gender, national origin, age or disability. The City of Peoria encourages diverse suppliers to respond to solicitations for products and services.

9. **Pre-Proposal Conference:** A conference will be held at the Municipal Office Complex, Materials Management Division:

   ADDRESS: 9875 N. 85th Ave., 1st floor
   Peoria, Arizona 85345
   Point of View Room

   DATE: **November 19, 2009**

   TIME: **9:00 a.m., local time**

   The purpose of this conference will be to clarify the contents of this Request For Proposal in order to prevent any misunderstanding of the City's position. Any doubt as to the requirements of this Request For Proposal or any apparent omission or discrepancy should be presented to the City at this conference. The City will then determine the appropriate action necessary, if any, and issue a written amendment to the Request For Proposal. Oral statements or instructions shall not constitute an amendment to this Request For Proposal.

10. **Proposal Format:** Proposals shall be submitted in one (1) original and five (5) copies on the forms and in the format as contained in the Request for Proposal. Proposals shall be on 8 1/2" & 11" paper with the text on one side only. All submittal information must contain data for only the local office(s) which will be performing the work. The proposals should be submitted in the maximum length of twenty (20) pages.

11. **Interview Guidelines:** During any requested interview, which would be scheduled in the future, be prepared to discuss your firm's proposal, staff assignments, project approach and other pertinent information. The presentation shall be

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approximately 30 minutes, allowing 30 minutes for a question and answer session. The Consultant's Project/Team Manager shall lead the presentation team and answer questions on behalf of the Consultant. If work involves a major sub-consultant, the firms Project/Team Manager's presence may also be requested (by the City) at the interview.

12. **Evaluation:** In accordance with the City of Peoria Procurement Code, awards shall be made to the responsible offeror whose proposal is determined in writing to be the most advantageous to the City, based upon the evaluation criteria listed below. The evaluation factors are listed in their relative order of importance.

    a. Project Understanding and Project Approach.
    b. Firm's Experience/Similar Projects.
    c. Staff's Capabilities and Assignments.
    d. Cost Considerations
    e. Conformance to Request for Technical Proposals.

13. **Discussions:** In accordance with the City of Peoria Procurement Code, after the initial receipt of proposals, discussions may be conducted with offerors who submit proposals determined to be reasonably susceptible of being selected for award.

14. **Proposal Opening:** Proposals shall be submitted at the time and place designated in the request for proposals. All information contained in the proposals shall be deemed as exempt from public disclosure based on the City's need to avoid disclosure of contents prejudicial to competing offerors during the process of negotiation. The proposals shall not be open for public inspection until after contract award. PRICES SHALL NOT BE READ. After contract award, the successful proposal and the evaluation documentation shall be open for public inspection.

15. **Performance Warranty**: This section does not relieve Consultant from its obligation to provide Work and Materials/Design Materials appropriate to the purposes of this Project. Nothing in this Agreement creates any contractual liability between the City of Peoria and any Subcontractor; however, the City of Peoria is an intended third-party beneficiary of all contracts for services, all Subcontracts, purchase orders and other agreements between the Consultant and third parties. The Consultant must incorporate the obligations of this Agreement into its respective Subcontracts, supply agreements and purchase orders.

16. **Permits and Approvals:** Consultant agrees and undertakes to obtain necessary permits and approvals, as per the scope of work, from all local, state and federal authorities for the project. In all other cases, the consultant agrees to assist the city to obtain all necessary permits and approvals from all local, state, and federal authorities for the project.

17. **Scope of Work Deliverable:** The successful Consultant shall prepare and provide a detailed Scope of Work for the project. The finalized Scope of Work shall include the agreed upon approach, method, format, and timing to complete the project.

18. **Inspection:** All work shall be subject to inspection, surveillance, and test by the City at reasonable times during the performance of the contract. The Consultant shall provide and maintain an inspection system which is acceptable to the City.

19. **Ownership of Documents:** All materials/design materials (hardcopy or electronic), drawings, specifications, reports, and other data developed by the Consultant, its assigned employees or subconsultants pursuant to this Agreement shall become the property of the City of Peoria as prepared, whether delivered to the City of Peoria or not. Unless otherwise provided herein, all such data shall be delivered to the City of Peoria or its designee upon completion of the agreement or at such other times as the City of Peoria or its designee may request.

    The City of Peoria shall indemnify and hold harmless the Consultant, its Subcontractors, Subconsultants, and their respective agents and employees from and against all claims, liabilities, demands, actions, costs and expenses (including attorneys' and experts' fees and costs) (collectively, "Claims") arising from any use by the City of Peoria, its successors or assigns of such Materials/Design Materials if reuse, modifications or amendments of any such materials/design materials are made without the prior consent and involvement of the Consultant.

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20. **Use of Materials/Design Materials:** The City of Peoria shall have unlimited rights to copy and use in connection with the Project all Materials/Design Materials, including the right to use same on the Project at no additional cost to the City of Peoria, regardless of degree of completion, provided that said services performed have been fully paid for as required by the terms of this Agreement exclusive of amounts disputed by City of Peoria in good faith. The Consultant agrees to and does hereby grant to the City of Peoria and any assignee or successor of the City of Peoria as owner of the Project a royalty-free license to any such Materials/Design Materials as to which the Consultant may assert any rights under the patent or copyright laws. The Consultant hereby assigns outright and exclusively to the City of Peoria all copyrights of the Project. The Consultant, as part of its agreements with any Subcontractor or Subconsultant, will secure such license and use rights from each such entity, and shall defend, indemnify and hold the City of Peoria and any successors or assigns harmless from any claims from such for claims by such entities for copyright or patent infringement.

21. **Investigation of Conditions:** The Consultant warrants and agrees familiarity of the work that is required, is satisfied as to the conditions under which is performed and enters into this contract based upon the Consultants own investigation.

22. **Compensation:** Compensation for services shall be based upon fees negotiated, including all approved costs and expenses incurred in connection with the project; including but not limited to, telephone and other communications, reproduction of documents, special consultants (as approved by the City) and computer costs.

23. **Acceptance:** Determination of the acceptability of work shall be completed in a responsive and professional manner and in accordance with the specifications, schedules, or plans which are incorporated in the Scope of Work.

24. **Payments:** The City shall pay the Consultant monthly, based upon work performed and completion to date, and upon submission of invoices. All invoices shall document and itemize all work completed to date. The invoice statement shall include a record of time expended and work performed in sufficient detail to justify payment.

25. **Insurance Requirements:** The Consultant, at Consultant's own expense, shall purchase and maintain the herein stipulated minimum insurance with companies duly licensed, possessing a current A.M. Best, Inc. Rating of A-, or approved unlicensed in the State of Arizona with policies and forms satisfactory to the City.

    All insurance required herein shall be maintained in full force and effect until all work or service required to be performed under the terms of the Contract is satisfactorily completed and formally accepted; failure to do so may, at the sole discretion of the City, constitute a material breach of this Contract.

    The Consultant's insurance shall be primary insurance as respects the City, and any insurance or self-insurance maintained by the City shall not contribute to it.

    Any failure to comply with the claim reporting provisions of the insurance policies or any breach of an insurance policy warranty shall not affect coverage afforded under the insurance policies to protect the City.

    The insurance policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against the City, its agents, representatives, directors, officers, and employees for any claims arising out of the Consultant's acts, errors, mistakes, omissions, work or service.

    The insurance policies may provide coverage which contain deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall not be applicable with respect to the coverage provided to the City under such policies. The Consultant shall be solely responsible for the deductible and/or self-insured retention and the City, at its option, may require the Consultant to secure payment of such deductibles or self-insured retentions by a Surety Bond or an irrevocable and unconditional letter of credit.

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The City reserves the right to request and to receive, within 10 working days, certified copies of any or all of the herein required insurance policies and/or endorsements. The City shall not be obligated, however, to review same or to advise Consultant of any deficiencies in such policies and endorsements, and such receipt shall not relieve Consultant from, or be deemed a waiver of the City's right to insist on, strict fulfillment of Consultant's obligations under this Contract.

The insurance policies, except Workers' Compensation and Professional Liability, required by this Contract, shall name the City, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

26. **Required Insurance Coverage:**

a. Commercial General Liability

Consultant shall maintain Commercial General Liability insurance with a limit of not less than $1,000,000 for each occurrence with a $2,000,000 Products/Completed Operations Aggregate and a $2,000,000 General Aggregate Limit. The policy shall include coverage for bodily injury, broad form property damage, personal injury, products and completed operations and blanket contractual coverage including, but not limited to, the liability assumed under the indemnification provisions of this Contract which coverage will be at least as broad as Insurance Service Office, Inc. Policy Form CG 00011207 or any replacements thereof. The coverage shall not exclude X, C, U.

Such policy shall contain a severability of interest provision, and shall not contain a sunset provision or commutation clause, nor any provision which would serve to limit third party action over claims.

The Commercial General Liability additional insured endorsement shall be at least as broad as the Insurance Service Office, Inc.'s Additional Insured, Form B, CG 20370704, and shall include coverage for Consultant's operations and products and completed operations.

If required by this Contract the Consultant subletting any part of the work, services or operations awarded to the Consultant shall purchase and maintain, at all times during prosecution of the work, services or operations under this Contract, an Owner's and Consultant Protective Liability insurance policy for bodily injury and property damage, including death, which may arise in the prosecution of the Consultant's work, service or operations under this Contract. Coverage shall be on an occurrence basis with a limit not less than $1,000,000 per occurrence, and the policy shall be issued by the same insurance company that issues the Consultant's Commercial General Liability insurance.

b. Automobile Liability

Consultant shall maintain Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damage of not less than $1,000,000 each occurrence with respect to the Consultant's any owned, hired, and non-owned vehicles assigned to or used in performance of the Consultant's work. Coverage will be at least as broad as coverage code 1, "any auto", (Insurance Service Office, Inc. Policy Form CA 00010306, or any replacements thereof). Such insurance shall include coverage for loading and off loading hazards.

c. Workers' Compensation

The Consultant shall carry Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction of Consultant's employees engaged in the performance of the work or services; and, Employer's Liability insurance of not less than $100,000 for each accident, $100,000 disease for each employee, and $500,000 disease policy limit.

In case any work is subcontracted, the Consultant will require the Subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of the Consultant.

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d. Professional Liability

The Consultant retained by the City to provide the work or service required by this Contract will maintain Professional Liability insurance covering acts, errors, mistakes and omissions arising out of the work or services performed by the Consultant, or any person employed by the Consultant, with a limit of not less than $1,000,000 each claim.

27. **Certificates of Insurance:** Prior to commencing work or services under this Contract, Consultant shall furnish the City with Certificates of Insurance, or formal endorsements as required by the Contract, issued by Consultant's insurer(s), as evidence that policies providing the required coverages, conditions and limits required by this Contract are in full force and effect.

In the event any insurance policy(ies) required by this contract is(are) written on a Aclaims made" basis, coverage shall extend for two years past completion and acceptance of the Consultant's work or services and as evidenced by annual Certificates of Insurance.

If a policy does expire during the life of the Contract, a renewal certificate must be sent to the City fifteen (15) days prior to the expiration date.

All Certificates of Insurance shall be identified with bid serial number and title. A $25.00 administrative fee will be assessed for all certificates received without the appropriate bid serial number and title.

28. **Cancellation and Expiration Notice:** Insurance required herein shall not expire, be canceled, or materially changed with respect to coverage or rating of carrier. All other changes shall be with thirty (30) days prior written notice to the City.

29. **Independent Contractor:**

a. General

i. The Consultant acknowledges that all services provided under this Agreement are being provided by him as an independent Consultant, not as an employee or agent of the City Manager or the City of Peoria.

ii. Both parties agree that this Agreement is nonexclusive and that Consultant is not prohibited from entering into other contracts nor prohibited from practicing his profession elsewhere.

b. Liability

i. The City of Peoria shall not be liable for any acts of Consultant outside the scope of authority granted under this Agreement or as the result of Consultant's acts, errors, misconduct, negligence, omissions and intentional acts.

ii. To the fullest extent permitted by law, the Consultant shall defend, indemnify and hold harmless the City, its agents, representatives, officers, directors, officials and employees for costs or damages for which the Consultant is legally responsible or for which the City is vicariously liable on account of the Consultant's willful or negligent acts, errors or omissions.

The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

c. Other Benefits

The Consultant is an independent Consultant, therefore, the City Manager will not provide the Consultant with health insurance, life insurance, workmen's compensation, sick leave, vacation leave, or any other fringe benefits. Further,

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Consultant acknowledges that he is exempt from coverage of the Comprehensive Benefit and Retirement Act (COBRA). Any such fringe benefits shall be the sole responsibility of Consultant.

30. **Key Personnel:** It is essential that the Consultant provide adequate experienced personnel, capable of and devoted to the successful accomplishment of work to be performed under this contract. The Consultant must agree to assign specific individuals to the key positions.

    a. The Consultant agrees that, once assigned to work under this contract, key personnel shall not be removed or replaced without written notice to the City.

    b. If key personnel are not available for work under this contract for a continuous period exceeding 30 calendar days, or are expected to devote substantially less effort to the work than initially anticipated, the Consultant shall immediately notify the City, and shall, subject to the concurrence of the City, replace such personnel with personnel of substantially equal ability and qualifications.

31. **Unifier Project Management System:** Awarded vendors may be required to utilize the City's Project Management System, Unifier, for the management of business processes and information regarding the awarded contract. Unifier is an on-line application and will be made available to awarded vendors at no additional charge. Vendors will utilize Unifier to submit and process information to the City such as: Field Change Order Requests, RFI's, Submittals, Payment Applications, Meeting Minutes, etc. Training will be offered to the vendors at no additional charge.

32. **Confidential Information:**

    a. If a person believes that a bid, proposal, offer, specification, or protest contains information that should be withheld, a statement advising the Materials Supervisor of this fact shall accompany the submission and the information shall be identified.

    b. The information identified by the person as confidential shall not be disclosed until the Materials Supervisor makes a written determination.

    c. The Materials Supervisor shall review the statement and information and shall determine in writing whether the information shall be withheld.

    d. If the Materials Supervisor determines to disclose the information, the Materials Supervisor shall inform the bidder in writing of such determination.

33. **Identity Theft Prevention:** The Contractor shall establish and maintain Identity Theft policies, procedures and controls for the purpose of assuring that "personal identifying information," as defined by A.R.S. § 13-2001(10), as amended, contained in its records or obtained from the City or from others in carrying out its responsibilities under the Contract, is protected at all times and shall not be used by or disclosed to unauthorized persons. Persons requesting such information should be referred to the City. Contractor also agrees that any "personal identifying information" shall not be disclosed other than to employees or officers of Contractor as needed for the performance of duties under the Contract. Contractor agrees to maintain reasonable policies and procedures designed to detect, prevent and mitigate the risk of identity theft. Contractor is required under this contract to review the City of Peoria's Identity Theft Program and to report to the Program Administrator any Red Flags as defined within that program. At a minimum, the contractor will have the following Identity Theft procedures in place:
    a. Solicit and retain only the "personal identifying information" minimally necessary for business purposes related to performance of the Contract.
    b. Ensure that any website used in the performance of the contract is secure. If a website that is not secure is to be used, the City shall be notified in advance before any information is posted. The City reserves to right to restrict the use of any non-secure websites under this contract.

c. Ensure complete and secure destruction of any and all paper documents and computer files at the end of the contracts retention requirements.
d. Ensure that office computers are password protected and that computer screens lock after a set period of time.
e. Ensure that offices and workspaces containing customer information are secure.
f. Ensure that computer virus protection is up to date.

34. **Confidentiality of Records:** The Consultant shall establish and maintain procedures and controls that are acceptable to the City for the purpose of assuring that information contained in its records or obtained from the City or from others in carrying out its functions under the contract shall not be used or disclosed by it, its agents, officers, or employees, except as required to efficiently perform duties under the contract. Persons requesting such information should be referred to the City. Consultant also agrees that any information pertaining to individual persons shall not be divulged other than to employees or officers of Consultant as needed for the performance of duties under the contract. These provisions shall not restrict the Design Professional from giving notices required by law or complying with an order to provide information or data when such order is issued by a court, administrative agency or other authority with proper jurisdiction.

35. **Ordering Process:** Upon award of a contract by the City of Peoria, Materials Management Division may procure the specific service awarded by the issuance of a purchase order to the appropriate Consultant. The award of a contract shall be in accordance with the City of Peoria Procurement Code and all transactions and procedures required by the Code for public bidding have been complied with. A purchase order for the awarded service that cites the correct contract number is the only document required for the department to order and the Consultant to delivery the service.

Any attempt to represent any service not specifically awarded as being under contract with the City of Peoria is a violation of the contract and the City of Peoria Procurement Code. Any such action is subject to the legal and contractual remedies available to the City inclusive of, but not limited to, contract cancellation, suspension and/or debarment of the Consultant.

~~36.~~ **Billing:** All billing notices to the City shall identify the specific item(s) being billed and the purchase order number. Items are to be identified by the name, model number, and/or serial number most applicable. Any purchase/delivery order issued by the requesting agency shall refer to the contract number resulting from this solicitation.

37. **Cancellation:** The City reserves the right to cancel the whole or any part of this contract due to failure by the Consultant to carry out any obligation, term or condition of the contract. The City will issue written notice to the Consultant for acting or failing to act as in any of the following:

a. The Consultant provides material that does not meet the specifications of the contract;

b. The Consultant fails to adequately perform the services set forth in the specifications of the contract;

c. The Consultant fails to complete the work required or to furnish the materials required within the time stipulated in the contract;

d. The Consultant fails to make progress in the performance of the contract and/or gives the City reason to believe that the Consultant will not or cannot perform to the requirements of the contract.

Upon receipt of the written notice of concern, the Consultant shall have ten (10) days to provide a satisfactory response to the City. Failure on the part of the Consultant to adequately address all issues of concern may result in the City resorting to any single or combination of the following remedies:

a. Cancel any contract;

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b. Reserve all rights or claims to damage for breach of any covenants of the contract;

c. Perform any test or analysis on materials for compliance with the specifications of the contract. If the results of any test or analysis find a material non-compliant with the specifications, the actual expense of testing shall be borne by the Consultant;

d. In case of default, the City reserves the right to purchase materials, or to complete the required work in accordance with the City Procurement Code. The City may recover any actual excess costs from the Consultant by:

   i. Deduction from an unpaid balance;

   ii. Or any other remedies as provided by law.

38. **Project Travel Reimbursable Expenses:** If travel expenses are allowed as part of the contract the reimbursable expenses will be as follows. All expenses will be billed to the City at cost without markup. Copies of bills for expenses are to be submitted with the invoice. Travel time to and from job site is excluded from this contract. There will be no allowances for parking or personal car mileage. No incidentals for travel of any kind are allowed under this contract.

The following is a list of allowable travel expenses under this contract agreement:

a. Transportation:

   i. Air Transportation – coach class fares, minimum 14 days advanced purchase, unless otherwise agreed upon.

   ii. Car Rental – mid size car, gas for rental car (City assumes no liability regarding additional insurance costs).

b. Lodging and Meals:

   i. Meals – three meals per day, at the current federal per diem rate for Maricopa County.

   ii. Lodging – not to exceed the current federal rate for Maricopa County. Vendors are encouraged to stay in hotels located within the City of Peoria when practical. A listing of accomodations within Peoria can be found on the following website: http://visitpeoriaaz.gov/accommodations.php

SCOPE OF BASIC SERVICES

TRUNK LINE 15 INCH & LARGER RISK ASSESSMENT PROGRAM

PROJECT UNDERSTANDING

The CITY of Peoria (CITY) is looking for a consultant to perform a risk assessment program for sewer lines 15 inches and larger, manholes, and all structures associated with the collection system.

This scope of work includes the inspection, evaluation, prioritization, and recommendations for rehabilitation. The CITY expects the consultant to evaluate and recommend available inspection technologies. Currently the city recognizes CCTV and Sonar Inspection technologies as the most relevant for these inspections. The selected consultant must be able to demostrate proficiency in required software packages prior to contract award. provide these options. This program includes the assessment of approximately 396,000 feet of sewer pipeline and 1,210 manholes. Quantities are shown in table form on the following page.

In general, the scope of work will consist of the following major tasks:

Task 1.0: Project Management

Task 2.0: Physical Inspection of Pipelines and Manholes

Task 3.0: NASSCO Certified Reviews of Field Inspections

Task 4.0: Final Condition Evaluation, Ranking, and Assessment Report

Task 5.0: Additional Services

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The CITY is contracting with the CONSULTANT to provide the above mentioned general services. Additionally, the CITY is requesting the CONSULTANT to record and report relevant observations, determinations, and recommendations regarding the need for pipeline and manhole rehabilitation or replacement. All Manholes, pipe segments, and relevant assets shall be referred to and labeled by the assigned City of Peoria Asset ID.

Rehabilitation/replacement recommendations should be consolidated into projects and then prioritized according to severity. The recommended project priority list will be based on each pipeline segments severity of corrosion, structural deterioration, and relative importance of the segment being evaluated. Said recommendations and projects shall be developed in cooperation with the CITY staff.

A breakdown of estimated sanitary sewer pipeline lengths (by diameter) is summarized in the following table 1.

Table 1.

Item	Unit	Qty
15 inch	feet	85450
16 inch	feet	7060
18 inch	feet	84230
20 inch	feet	430
21 inch	feet	37190
24 inch	feet	61040
27 inch	feet	2630
30 inch	feet	62590
33 inch	feet	10600
36 inch	feet	43600
42 inch	feet	1350
5' Manhole	Each	1210

Note: Values are based on the CITY of Peoria GIS data and are approximate.

A detailed description of the scope of work follows:

TASK 1.0: PROJECT MANAGEMENT

1.1 Management: CONSULTANT shall manage, monitor and review work progress and budget of project team including sub-consultants.

1.2 Monthly Invoices: CONSULTANT shall prepare and submit to the CITY monthly invoices including a brief written narrative of work completed the previous month, an updated schedule, and actual and projected budgets. The submittal of these invoices will be done trhough the CITY's electronic Project Management Software Program.

1.3 Kickoff Meeting: Meeting to define milestones, respective responsibilities, coordination contacts between CITY and CONSULTANT, and progress meeting format and dates.

1.4 Progress Meetings: CONSULTANT shall participate in monthly progress meetings with CITY staff. The purpose of the monthly progress meeting is to provide an opportunity for CONSULTANT and CITY to review progress of the work, present and discuss interim results, anticipate and mitigate any performance problems and address other issues and concerns. Other project meetings might be necessary and should be considered as part of the consultant's scope.

Within two weeks of the notice-to-proceed, CONSULTANT shall prepare for CITY's review a proposed standard progress meeting agenda and written meeting minutes format. CITY shall provide comments to CONSULTANT within one week following submittal of the proposed meeting agenda and meeting minute's format.

CONSULTANT shall prepare meeting minutes for each monthly progress meeting. Meeting minutes shall be prepared and submitted to all meeting attendees in draft form within two working days following the meeting. Review comments shall be due back to CONSULTANT within two working days following receipt of draft meeting minutes.

1.5 Other Meetings: The CONSULTANT shall prepare and distribute meeting minutes for all meetings with the CITY, summarizing agreements reached and actions required.

1.6 Quality Assurance Reviews: The CONSULTANT shall perform periodic quality reviews of the work progress as required to ensure that the project scope is achieved. The CONSULTANT shall review and edit all deliverables in-house for quality assurance prior to submittal to the CITY.

1.7 Coordination: The CONSULTANT shall coordinate all subcontracted work required for the execution of this project, including proposed schedule, areas of work, lane closure requests, by-pass setup and operation, pipeline cleaning, and CCTV operations with CITY and other appropriate jurisdictions.

1.8 Overall Project Schedule: CONSULTANT shall prepare an overall project schedule which designates milestones agreed to by CITY and CONSULTANT.

TASK 2.0: PHYSICAL INSPECTION OF PIPELINES AND MANHOLES

2.1 Schedule for Physical Inspection: CONSULTANT shall provide the CITY with a proposed schedule for all sewer inspections, including closed circuit television (CCTV), Sonar, and manhole inspections. This schedule shall be included with the Overall Project Schedule discussed in Task 1.8. Sufficient float time shall be incorporated in the schedule to allow for the inspection and/or assessment of emergency work and Capital Improvement Projects (CIP) which may require immediate attention.

2.2 Pre-Inspection Walk-through: Throughout the physical inspection period, a pre-inspection walk-through shall be conducted prior to the start of inspection of any segment. This field inspection shall be conducted to:

- Locate all manholes within the segment of sewer to be inspected. The CITY shall provide assistance in locating or providing access to manholes that CONSULTANT is unable to locate or manholes that are inaccessible.
- Identify access and traffic control issues.
- Identify issues to be addressed by CITY maintenance staff prior to inspection.
- Identify any other agencies, jurisdictions or property owners that will need notification.

2.3 Permits: The CONSULTANT shall obtain all necessary permits from the governing agencies that apply to project work, including traffic control, allowable work hours, and other provisions the agencies impose. A Right of Way permit and Traffic Control Plan will be submitted to the City of Peoria. The plan shall include an outline of the permit acquisition procedure for lane closure, methods for proper signing and barricades, which complies with local requirements and signage as required per city standards, including a 24 hr emergency number provided by the Contractor

2.4 Manhole Inspections: Each manhole shall be physically inspected according to North American Society of Sanitary Sewer Companies-Manhole Assessment Certification Program (NASSCO-MACP) guidelines and NASSCO-MACP certified personnel. The city has an established Manhole inspection program. The selected consultant shall follow the same established format and data collection standards as the city's program. Prior to contract award, the consultant shall demonstrate proficiency in Hansen Software and their ability to migrate information seamlessly to Hansen. Confined space entry is not required for the inspection of manholes. Photographs or video of each manhole shall be taken to document upstream and downstream conditions, hydraulics, condition of the manhole, evidence of surcharging, etc.

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2.5 Inaccessible Manholes: It is anticipated that certain manholes may not be accessible either due to: paving over the manholes, covers have been bolted down, manholes buried in vegetated areas, manholes may not have been installed. The CONSULTANT shall provide assistance to the CITY in identifying these manholes in advance, shall provide sketches and field notes required to provide access using CITY forces, or another contractor working for the CITY.

In the event that CITY forces cannot provide access to one or more inaccessible manholes in a timely manner, the CONSULTANT shall hire a contractor to provide access to the manhole(s) required in this contract. Fees for thes additional services will be negotiated as per the scope of needed work.

2.6 Closed Circuit Television (CCTV) Video, Sonar Inspection and Cleaning: Pipeline segments shall be inspected via NASSCO-PACP certified CCTV equipment and technicians. Video of the CCTV inspection shall be in Granite XP Version 3.4.2 as required by the CITY and inspection logs shall be prepared for each sewer line segment inspected. CITY shall have access to inspection logs, pictures, etc. throughout the duration of the project by DVD or removable hard disk on an as requested basis.

2.7 Sonar Inspections: Sonar may be substituted for CCTV inspections with the permission of the CITY representative. Measurement of Sonar Inspection shall be made on a linear foot basis, measured to the nearest whole foot, from center of the upstream manhole to center of the downstream manhole. One set up will be included in each mailine segment.

2.8 Cleaning and Additional Inspections: Any needed cleaning or additional inspections shall be approved by CITY of Peoria prior to commencing work and will be paid for at a pre-negotiated rate. However, the build-up of debris in the large diameter pipelines is a major concern for the CITY. For that reason, and to assist the CITY in their maintenance, budgeting, and scheduling, documentation of the location of all heavy debris along with an estimate of the type, volume, and cause of the build-up shall be included in the report. To better project costs, costs shall be submitted with the proposal in the format on the included PRICE SHEET on page 25 of 28.

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TASK 3.0: NASSCO CERTIFIED REVIEWS OF FIELD INSPECTIONS

3.1 CCTV/Sonar Review: The CONSULTANT shall review all pipeline CCTV inspections (video, pictures and logs) using NASSCO certified reviewers. Each inspection shall be reviewed to ensure that adequate information has been collected, code defects, and to evaluate the existing condition of the pipeline.

3.2 Prepare Defect Logs: The CONSULTANT shall prepare defect logs during the CCTV review to identify and record the defects identified. All Data from the certified review shall be entered into the Granite XP software. The consultant shall demonstrate prior to contract award proficiency and access to Granite software Version 3.4.2 and their ability to migrate information to the City's Hansen system. Field inspection and defect logs shall be included in the appendix of the Evaluation Report.

3.3 Preliminary Pipeline Condition Assessment: Based on the identified defects in videoing and other information such as logs, and as-built plans; the pipe condition shall be assessed using peak and/or total defects. The condition grade of the sewer shall be prepared based on the following:

Rating	Condition	Condition Rating for Corrosion Severity	Implication
1	Excellent	Minor Defects	Failure unlikely in the foreseeable future
2	Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years
3	Fair	Moderate defects that will continue to deteriorate	Pipe may fail in 10 to 20 years
4	Poor	Severe defects that will become Grade 5 defects within the foreseeable future	Pipe will probably fail in 5 to 10 years
5	Immediate Attention	Defects requiring immediate attention	Pipe has failed or will likely fail within the next five years

3.4 Manhole Reviews: The CONSULTANT shall review the video, pictures and logs for each manhole inspected using a NASSCO-MACP certified reviewer. Each inspection shall be reviewed to ensure that adequate information has been collected to evaluate the existing condition of the manhole.

3.5 Prepare Manhole Defect Logs: The CONSULTANT shall prepare defect logs during the picture and data review to identify and record all defects found. Defect logs shall be presented in a table format in the Evaluation Report. This table shall summarize the findings of the field inspection and defect logs. Field inspection and defect logs shall also be included in the Evaluation Report. All data shall be entered into Hansen software. The consultant shall demonstrate prior to contract award their proficiency in the Hansen software

and their ability to transfer information to the city's system.

3.6 Preliminary Manhole Condition Assessment: Based on the identified defects, each manholes condition shall be assessed using peak and/or total defects. The condition grade of each manhole will be based on the following:

Manhole Rehabilitation Rating	Recommended Action
Good	Re-Assess in 5 – 10 Years
Fair	Re-Assess in 3 – 5 Years
Poor	Rehabilitate in 0 – 5 years

TASK 4.0: FINAL CONDITION EVALUATION, RANKING, AND ASSESSMENT REPORT

4.1 Identify Rehabilitation Ratings: The CONSULTANT shall develop rehabilitation ratings for each sewer segment inspected. This rehabilitation rating shall account for the internal condition assessment, location, importance, and the seriousness of failure.

4.2 GIS Discrepancies: City will provide data such as pipe size, pipe material, pipe size, inverts, etc. The consultant shall field verify this data while completing inspections. All materials, sizes, inverts, etc. found during the field inspections shall be compared to the CITY GIS database and an updated table shall be included in the Evaluation Report in an EXCEL or ACCESS format.

4.3 Rehabilitation Project Priority List: If the condition of the pipeline(s) mandates repair and/or maintenance, recommended rehabilitation projects will be suggested to the CITY as part of the Evaluation Report with the following information:

- Said projects shall be grouped into logical construction projects.
- Recommended completion dates shall be provided based on anticipated remaining life.
- An initial effort to identify major construction issues that may be incurred during the rehabilitation/replacement process shall also be reviewed. This may include access, traffic control, bypass pumping, and other issues. The primary purpose in identifying these issues is to begin accounting for site-specific conditions as rough-order-of-

magnitude cost estimates are developed.

- Preliminary cost estimates shall be developed for each rehabilitation/replacement project.

- Each project shall identify the benefits and limitations of various alternative methods for rehabilitation including conventional and trenchless methodologies. CONSULTANT shall initially identify rehabilitation alternatives appropriate to each pipeline. This preliminary identification shall provide the basis for more detailed evaluation of alternatives during the detailed design phase. CONSULTANT shall prepare a draft of the project priority list and then meet with City staff prior to finalizing the recommendation.

4.4 Evaluation Report: The CONSULTANT shall prepare and submit three (3) hard copies and one electronic PDF copy of the Draft Evaluation Report to the CITY summarizing the results of the condition assessment study, including the recommended rehabilitation projects. The Draft Report will not include the appendixes. CITY will have 20 working days to review the report and provide comments. CITY will return one consolidated final comments copy of the Draft Evaluation Report to CONSULTANT for updating.

Free standing sections of the report may be submitted as completed throughout the project as agreed between CITY and CONSULTANT. CITY agrees to expedite the review of these small report sections.
CONSULTANT shall then prepare the Final Evaluation Report incorporating comments from CITY reviews. Three (3) hard copies and one electronic .pdf copy (bookmarked to the sections defined in the report) of the Final Evaluation Report shall be delivered to the CITY 20 working days after CONSULTANT receives all draft report comments and reviews.

TASK 5.0: ADDITIONAL SERVICES

Additonal Services not described in this scope related to facilitating the inspection of the sewer lines via procedure and/or available technologies will be considred and evaluated by the City. These services shall be negotiated before work is executed.

PRICE SHEET

Solicitation Number: **P10-0033**

Materials Management
Procurement
8314 West Cinnabar Street
Peoria, Arizona 85345-6560
Phone: (623) 773-7115
Fax: (623) 773-7118

Item #	Item Identification	Price
1	15" Sewer Line Initial TV Set up	
2	15" Sewer line Inspection per foot	
3	15" Sewer Line Initial Sonar Set up	
4	15" Sewer Line Inspection per foot	
5	15" Sewer Line Additional TV Setup	
6	15" Sewer Line Additional Sonar Set up	
7	15" Cleaning per foot	
8	16" Sewer Line Initial TV Set up	
9	16" Sewer line Inspection per foot	
10	16" Sewer Line Initial Sonar Set up	
11	16" Sewer Line Inspection per foot	
12	16" Sewer Line Additional TV Setup	
13	16" Sewer Line Additional Sonar Set up	
14	16" Cleaning per foot	
15	18" Sewer Line Initial TV Set up	
16	18" Sewer line Inspection per foot	
17	18" Sewer Line Initial Sonar Set up	
18	18" Sewer Line Inspection per foot	
19	18" Sewer Line Additional TV Setup	
20	18" Sewer Line Additional Sonar Set up	
21	18" Cleaning per foot	
22	20" Sewer Line Initial TV Set up	
23	20" Sewer line Inspection per foot	
24	20" Sewer Line Initial Sonar Set up	
25	20" Sewer Line Inspection per foot	
26	20" Sewer Line Additional TV Setup	
27	20" Sewer Line Additional Sonar Set up	
28	20" Cleaning per foot	
29	21" Sewer Line Initial TV Set up	
30	21" Sewer line Inspection per foot	
31	21" Sewer Line Initial Sonar Set up	
32	21" Sewer Line Inspection per foot	
33	21" Sewer Line Additional TV Setup	
34	21" Sewer Line Additional Sonar Set up	
35	21" Cleaning per foot	
36	24" Sewer Line Initial TV Set up	
37	24" Sewer line Inspection per foot	

PRICE SHEET

Solicitation Number: **P10-0033**

Materials Management
Procurement
8314 West Cinnabar Street
Peoria, Arizona 85345-6560
Phone: (623) 773-7115
Fax: (623) 773-7118

Item #	Item Identification	Price
38	24" Sewer Line Initial Sonar Set up	
39	24" Sewer Line Inspection per foot	
40	24" Sewer Line Additional TV Setup	
41	24" Sewer Line Additional Sonar Set up	
42	24" Cleaning per foot	
43	27" Sewer Line Initial TV Set up	
44	27" Sewer line Inspection per foot	
45	27" Sewer Line Initial Sonar Set up	
46	27" Sewer Line Inspection per foot	
47	27" Sewer Line Additional TV Setup	
48	27" Sewer Line Additional Sonar Set up	
49	27" Cleaning per foot	
50	30" Sewer Line Initial TV Set up	
51	30" Sewer line Inspection per foot	
52	30" Sewer Line Initial Sonar Set up	
53	30" Sewer Line Inspection per foot	
54	30" Sewer Line Additional TV Setup	
55	30" Sewer Line Additional Sonar Set up	
56	30" Cleaning per foot	
57	33" Sewer Line Initial TV Set up	
58	33" Sewer line Inspection per foot	
59	33" Sewer Line Initial Sonar Set up	
60	33" Sewer Line Inspection per foot	
61	33" Sewer Line Additional TV Setup	
62	33" Sewer Line Additional Sonar Set up	
63	33" Cleaning per foot	
64	36" Sewer Line Initial TV Set up	
65	36" Sewer line Inspection per foot	
66	36" Sewer Line Initial Sonar Set up	
67	36" Sewer Line Inspection per foot	
68	36" Sewer Line Additional TV Setup	
69	36" Sewer Line Additional Sonar Set up	
70	36" Cleaning per foot	
71	42" Sewer Line Initial TV Set up	
72	42" Sewer line Inspection per foot	
73	42" Sewer Line Initial Sonar Set up	
74	42" Sewer Line Inspection per foot	

PRICE SHEET

Solicitation Number: **P10-0033**

Materials Management
Procurement
8314 West Cinnabar Street
Peoria, Arizona 85345-6560
Phone: (623) 773-7115
Fax: (623) 773-7118

Item #	Item Identification	Price
75	42" Sewer Line Additional TV Setup	
76	42" Sewer Line Additional Sonar Set up	
77	42" Cleaning per foot	
78	5' Manhole Inpection Set up	
79	5' Manhole inspection	

	QUESTIONNAIRE	Materials Management Procurement 8314 West Cinnabar Street Peoria, Arizona 85345-6560 Phone: (623) 773-7115 Fax: (623) 773-7118
	Solicitation Number: **P10-0033**	

Has your firm been certified by any jurisdiction in Arizona as a minority or woman owned business enterprise? Yes_____, No_____x_____.

If yes, please provide details and documentation of the certification.

BROWN AND CALDWELL

201 East Washington Street, Suite 500
Phoenix, Arizona 85004

Tel: (602) 567-4000
Fax: (602) 567-4001

December 15, 2009

Ms. Jennifer Miller
City of Peoria
Materials Management
9875 North 85th Avenue, 2nd Floor
Peoria, Arizona 85345

RE: Proposal for Professional Engineering Services for Trunk Line 15 Inch and Larger Risk Assessment Program, Solicitation Number P10-0033

Dear Ms. Miller:

Brown and Caldwell (BC) is pleased to submit our proposal to provide professional engineering services for the Trunk Line 15 Inch and Larger Risk Assessment Program. We offer a locally based project team that has the experience, resources, and commitment to perform and complete this inspection and condition assessment of the sanitary sewers project for the City of Peoria (City).

We have teamed with the local firm of ProPipe Professional Services (ProPipe) for cleaning, CCTV inspection, and manhole inspections. We propose to employ both traditional and innovative non-traditional CCTV and manhole inspection methods and technologies. Our team will provide the City with inspection data of the highest quality and a prioritized rehabilitation plan with actionable information.

The BC project team brings the City recent and extensive experience assisting other clients on similar pipeline inspection and condition assessment projects. Our team members have a strong understanding and knowledge of the challenges to be faced, solutions to overcoming those challenges, and a proposed sound technical approach to perform the work. Our team's experience in conducting sewer investigations allows us to work faster, gather better data the first time, and provide knowledgeable solutions to the City sooner.

We are committed to your success and look forward to the opportunity to work with the City on this project.

Very truly yours,

Brown and Caldwell

Ronald Ablin, PE
Project Manager

Introduction

The City of Peoria (City) is taking a proactive approach to their infrastructure by instituting a program to inspect and assess all of their sanitary sewer pipelines 15 inches in diameter and larger. For the past 14 years, sewer assessment and rehabilitation has been a primary service of the local Brown and Caldwell Office. Our proposed project team includes:

- Local staff dedicated full time to the assessment and rehabilitation of pipelines
- An understanding of the unique sewer conditions in the Southwest
- National Association of Sewer Service Companies (NASSCO) certified trainers and staff
- A nationwide understanding of proven technologies
- Field staff who understand large diameter investigation methodologies
- A proven history of conducting similar programs.

Our team will work with the City to develop a program that investigates the current condition, identifies areas of immediate concern and provides the foundation for a long-term asset management program.

Brown and Caldwell (BC) will dedicate a highly qualified Phoenix-based team with extensive and diversified experience, expertise, resources, and the commitment needed to provide exceptional project execution and delivery.

Sewer pipelines provide a vital function in conveying sewage and maintaining public health within a community. Pipeline condition assessment identifies the structural and operational defects that can impact sewer function. Every pipeline within the collection system will ultimately require either rehabilitation or replacement to maintain service. A good condition assessment program maximizes the useful life of a pipeline while limiting the potential for failure.

The recent pipeline failure on Northern Avenue has elevated awareness of the need to investigate and understand the conditions within the large diameter pipelines within the City. Large diameter pipelines are typically of greater concern due to:

- High volume of flow
- Large service area
- Highly corrosive environment
- Odors
- High consequence of failure

Larger diameter pipelines are more time consuming, difficult and expensive to investigate due to:

- Depth of flow
- High turbulence and velocities
- Aggressive environments

Our team provides the necessary experience and equipment to investigate your high profile pipelines, including specialized lighting, tractors and floats needed for larger diameter investigations. Our team has completed projects of similar size and scopes and is well experienced with both Granite XP inspection software and Hansen Maintenance Management databases.

The City's CCTV program will provide the initial foundation for monitoring pipeline conditions, identifying repair and forecasting future funding needs. BC will creatively apply our knowledge and experience with pipeline condition assessment to positively identify repair or replacement needs to sustain system integrity. We understand the importance of project risk identification in preventing problems rather than reacting to them.

The following sections detail our Project Understanding and Approach, Firm Experience and Staff Capabilities as outlined in your Request for Proposals.

BC has conducted numerous large-scale sewer investigations in the Southwest.

A. Project Understanding and Project Approach

BC's understanding of this project and proposed method to accomplish the work is founded on the principle of defining data collection needs, performing inspections with appropriate "fit for purpose" technology, then evaluating the inspection observations and findings from a sound engineering perspective. BC's approach will provide the City with a knowledge-based Capital Improvement Project (CIP) plan that will enable the City to confidently move forward by allocating funds only where and when most needed.

The City has identified approximately 400,000 linear feet of sanitary sewer pipeline ranging in size from 15- to 42-inch, for inspection, assessment, evaluation, and potential rehabilitation. Approximately 1,200 manholes have also been identified as needing inspection and assessment.

Hole in 18-inch PVC pipe along Cactus Road

Recent investigations in Northern Avenue and Cactus Road have identified issues within the City's collection system. Addressing these issues in a timely manner is imperative to preventing collapse and sanitary sewer overflows. As this is the first investigation on many of the City's pipelines, severe defects are likely to be identified that will mandate immediate attention. Our team will work directly with the City to expeditiously identify these pipelines and develop solutions.

Based on the results of other system investigations, it is likely that a majority of the pipelines will be in good condition. Others will have some level of defects that mandates future rehabilitation or reinvestigation. The data collected will form the basis for the condition assessment evaluation and the overall collection system asset management program.

The team's knowledge and experience with conveyance system conditions provides rapid completion of the CCTV investigation and condition assessment with minimal project issues.

Our team will work closely with the City to accomplish the following tasks:

- Prioritize pipeline for inspection
- Determine the most effective method of completing the inspections
- Complete inspections following NASSCO standards and guidelines by certified personnel
- Utilize Granite XP Version 3.4.2 inspection software to capture CCTV and defect data
- Integrate inspection data into City operated Hansen Maintenance Management System
- Provide clear, concise assessment of the sewer system based upon the data collected
- Work with City GIS personnel to link assessment data to the City's GIS system
- Recommend and prioritize rehabilitation
- Provide cost estimates for rehabilitation work.

BC and **ProPipe Professional Pipe Services (ProPipe)**, our proposed subconsultant, are experienced, knowledgeable, and well prepared to successfully perform this project for the City. We have assembled a Phoenix-based team that offers the City recent and extensive experience assisting other clients on similar pipeline inspection and condition assessment projects. Our team members have a strong understanding and knowledge of the issues to be faced.

We have an integrated, sound technical approach to performing the work that provides the City a full services program producing accurate and reliable results.

We can mobilize quickly, execute critical tasks rapidly, and do it right the first time.

Approach

Our approach to your project is to conduct a timely investigation of your collection system in conjunction with City Staff to identify the current condition, areas for immediate repair and future needs and funding. Our approach to completing your program is outlined in the following sections.

Task 1: Project Management and Administration

BC's approach to this project is to put forth an engaged, seasoned Project Manager, **Ron Ablin, PE**, supported by a technically proficient team of in-house staff and select, highly specialized subconsultants to accomplish the project in an uncomplicated manner, on time and within budget.

Mr. Ablin has nearly 20 years of experience performing pipeline monitoring, inspection, and condition assessments. He will provide technically sound project leadership and will be available to quickly resolve any issues that arise.

Schedule

BC will develop a detailed proposed schedule utilizing Microsoft® Project for City approval. The schedule will include all tasks defined in the scope of work, as well as key milestones, report submittals, and deadlines. Based on the CCTV linear footage defined in the scope of work, anticipated challenges associated with large diameter pipelines, and available funding, it is anticipated that field work activities will last approximately 20 months. It is further anticipated that the project will be completed within 24 months of the Notice to Proceed, including time to ramp-up field work activities, apply for permits, perform the condition assessment, recommend rehabilitation, and deliver the final report.

Coordination and Communication

Effective coordination and communication is at the core of BC's approach to Task 1, Project Management and Administration. The timely delivery of information pertaining to planned activities, work efforts accomplished, and issues anticipated and resolved are central to BC's method to accomplish the work.

The BC project team will deliver timely, concise, and clear information that will provide the City's Project Manager and other City staff with a clear picture of what is planned, what is being accomplished, and what has been accomplished. We propose to communicate with your Project Manager, in-person, via e-mail and telephone calls. We will work with the City to determine the most desirable form(s) of communication and who, in addition to your Project Manager, should receive project information.

At project inception, we propose to conduct a kick-off meeting with all BC team members and City representatives to initiate coordination and communication activities for the project.

Project Kick-off Meeting. The objectives of the project kick-off meeting will be to introduce the members of the BC team to City staff. We will also review the work scope and recap "critical success factors" (CSF) that will define the successful accomplishment of the work scope. Together, we will exchange information concerning the project area, set clear lines of communication between our team and the City, and establish weekly e-mail status reporting delivery. "Items of interest" and red flag notification procedures will also be discussed. A regular and periodic progress meeting schedule will be established at four-week intervals. In partnership with the City, we will confirm the schedule, as well as discuss deliverables, identify administrative details, and describe the procedures and process for issuing Task Orders.

The meeting will provide a forum for discussion of additional topics that the City wishes to communicate to the project team. The kick-off meeting will further provide the City with a clear indicator that BC understands the work scope and that the methods to accomplish the work are in place.

Periodic Coordination and Communication. We anticipate the need for periodic coordination and communication that falls outside of structured monthly progress meetings, and other formal processes. Our Project Manager, Ron Ablin, and others will be available for calls to and from the City when needed. Complete contact information, including cell phone numbers, will be provided to the City so your staff will have immediate access to the project leadership team. In addition, we will provide cell phone contact numbers for ProPipe personnel. The availability of the BC team provides an avenue to coordinate and communicate information, benefiting the City by having direct lines of communication to our leadership team.

The timely communication of pertinent information will provide the City's Project Manager and other City staff with a level of comfort, knowing that they will always be informed on all aspects of the project.

Items of Interest Notification Procedures. As is typical of all CCTV and manhole inspection projects, we anticipate the field inspection crews will periodically make observations or discovery of conditions that we believe may be of interest to the City. Depending upon the nature of the "items of interest," we will determine the best method to communicate these discoveries to the City. A phone call to the City's Project Manager is generally in order and may be followed with an e-mail describing the location, and contain pictures, if available. The benefit to this approach is that the project team will be serving as the City's "eyes and ears" in the field and alerting staff to non-emergency items that may require City attention and that may not have been known about otherwise.

Red Flag Notification Procedures. When emergency conditions are discovered during the field work, the project team will notify the City immediately followed by a Red Flag Notification report within 24 hours of discovery. We propose to establish a direct line of communication with the City that allows for an immediate straight-line communication from the field inspectors to City staff for true emergencies.

The reasons behind this are simple. We do not want any delay in communications between the field inspectors observing the emergency conditions and the City. We propose to allow our field inspectors to determine emergency conditions such that, in their professional judgment, the condition poses the threat of an imminent sewer spill if remedial action is not taken immediately.

BC maintains an emergency contact list with office and cell phone numbers of all staff working on the project and develops a line of communication for emergency conditions, such as sanitary sewer overflows or other conditions that require prompt attention. The emergency contact list will be a part of the Project Management Plan (PMP) developed and submitted to the City at the beginning of the project.

BC will develop and deliver to the City a project-specific Field Work Health & Safety Plan.

Field Work Health & Safety Plan and Weekly Tailgate Safety Meetings. Because of the nature of the work to be performed, field inspectors and, at times, office staff from multiple firms will be exposed to such hazards as traffic, heat, dehydration, dogs, snakes or other vermin, gases emanating from the sewers, heavy manhole lids requiring removal and replacement, and heavy equipment. BC will develop and deliver to the City a project-specific Field Work Health & Safety Plan (FWH&SP). All subconsultants and staff working on the project will be required to review the FWH&SP and acknowledge receipt and review by signature. To reinforce the performance of all work in a safe manner, weekly tailgate safety meetings will be mandatory throughout the term of the project. The tail-gate meetings will last for approximately 15 to 30 minutes and include discussions related to anticipated work conditions and efforts and, as work progresses, issues encountered, solutions posed, and lessons learned.

Routine and Periodic Progress Meetings. We propose to attend one project status meeting every four weeks during the course of the project. The progress meetings will serve to review progress of the work, budget, schedule, and deliverable status. The meetings will also provide a forum to review the prior weekly e-mail reports and look forward at the work to be accomplished. Issues encountered, resolved, and anticipated will be discussed.

Task 2: Inspection of Pipelines and Manholes

Using City-provided GIS map information, the BC team will perform a desktop review of the pipeline segments with ArcMap or GIS software from the supplied data layers to provide recommendations for dividing the City's pipelines into two groups of similar sizes based on criticality and risk of failure. We will evaluate the two groups and further prioritize them based on the largest percentage of suspected issues/priorities, and expected problems. The area with the largest anticipated issues will be recommended for inspection first. The deliverables for this task will include the basis of prioritization and the recommended two-year priority list.

CCTV work will also be scheduled based on traffic conditions, residential factors, and noise-sensitive areas in order to minimize public disturbance and inconvenience. BC will track progress of CCTV, condition assessment, and repair prioritization utilizing GIS to develop area maps. In addition, field crews will note if actual conditions conflict with information provided from the GIS system in order to allow City staff to make corrections to the GIS database.

During field reconnaissance efforts, we anticipate encountering manhole covers that are locked or bolted down or otherwise secured that will require special tools, keys or openers for removal. The field inspectors will compile a list of these manholes and the nature of the opening effort. This list will be communicated to the City via a weekly e-mail project status report.

In addition to the manholes we cannot open, we anticipate encountering manholes that cannot be found. The field inspectors will compile a list of these manholes and document field conditions where the manhole was expected to be located. The list of these manholes will also be communicated to the City via the weekly e-mail project status report.

Unlined 30-inch concrete pipeline

We will maintain logs of all field activities and provide the logs to the City upon request. Deliverables for this task will include the lists of manholes on private property and manholes we cannot open, cannot access, or cannot locate. All manholes will be identified by facility sequence number and street address, if possible. The manhole lists will be sent to the City via the weekly e-mail status report and updated as work progresses.

Prior to any inspection activities the BC team will schedule a pre-inspection walk-through with the City to locate manholes, discuss traffic concerns, establish notification requirements, and identify issues to be addressed by City maintenance staff prior to actual inspections.

Using information from the pre-inspection walk-through, ProPipe will obtain the necessary Right-of-Way permits, Extended Hour Work permit, and submit traffic control plans for approval. Our Extended Hour Work permit will allow inspection during the lowest flow periods between 9:00 p.m. and 5:00 a.m., giving us the best possible view of the pipeline under live flow conditions.

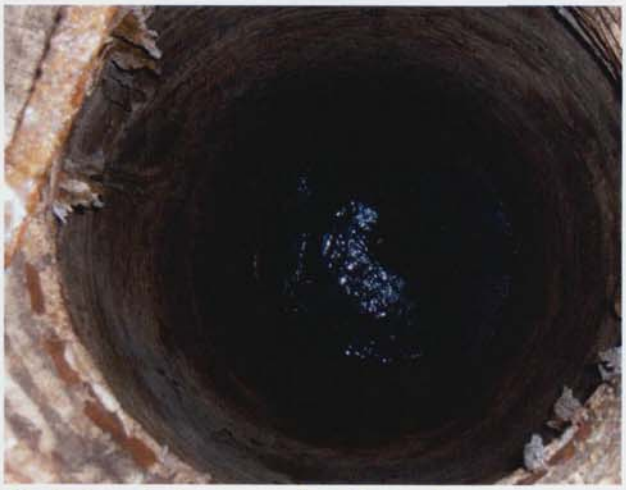
Manhole Inspection

Manholes will be inspected in accordance with the City Manhole Inspection Program.

The BC team will utilize NASSCO Manhole Assessment Condition Program (MACP) techniques while inspecting manholes.
We will include the following elements as part of our inspection process:

- Observing and recording all structural and operational defects
- Photographing the interior of the manhole with a digital pole camera
- Photograph all connections to the manhole and record flow direction, pipe conditions within view, and hydraulic conditions as flow moves through the manhole.

Our abbreviated manhole inspection program can save time and inspection funds while providing the information necessary to assess actual conditions and make rehabilitation recommendations.



Typical manhole as seen from the surface

As an alternative to completing a full inspection on each manhole and to reduce inspection time and cost, the City may want to consider conducting Manhole Checks. Our inspection team will open and take photographs of each manhole and any defects they observe. We will evaluate this information and make recommendations based upon the information collected. If it is determined that a full manhole investigation is required to gather additional information to help in the rehabilitation recommendations, we will proceed with the program as outlined above.

When it has been determined that access to a manhole is not possible because it may be buried or paved over, the BC team will work with the City to document the location. We will provide a sketch of the location based upon our CCTV inspection and work with City personnel to locate and open the manhole. We will also utilize the CCTV inspection effort to attempt inspection of the manhole from the pipeline invert. This method will also be used to confirm the existence of manholes that do not appear in the City's GIS but do exist in the field.

Inspection of Sewer Lines

The key to planning and successfully executing CCTV inspections is communication and exchange of information and data. The City's GIS mapping data will be used by the CCTV crews to populate the inspection database. This direct integration of City GIS data into the CCTV inspection database will reduce errors associated with field crews reading maps and entering manhole and pipeline designation numbering. It also allows for the export of the inspection data on a routine and periodic basis, as well as the seamless generation of maps indicating where inspections have been accomplished to date. These maps will be used to update the City as to project progress.

The work efforts associated with CCTV inspection of pipelines is straight-forward when the planning is well thought out and executed accordingly.

Laser/Sonar inspection equipment used to gain additional information during inspection

The BC team will work with the City to prioritize inspections to reduce risk of sewer pipeline failure while utilizing the available funding to achieve the maximum amount of data collection possible. A review of historical maintenance information and past rehabilitation projects will be considered along with pipeline flows and location as we develop our inspection prioritization.

ProPipe is a highly respected local cleaning and CCTV inspection services firm. BC and ProPipe have successfully completed numerous sewer inspection and assessment projects together. BC personnel have established a unique relationship working directly with ProPipe in the field, which enables the team to get more detailed information concerning the actual condition of the pipeline faster and with complete reliability. This long-standing relationship will allow the team to not only collect the necessary data to provide NASSCO Pipeline Assessment Condition Program (PACP) defect coding of the pipelines but also provides critical information required to properly assess the pipeline and timely, accurate rehabilitation recommendations.

Through analysis of the type of severity of the observed defects, we will determine two separate condition grades, structural and operational, for individual pipe segments.

Clay tile pipeline with structural and operational defects

The CCTV inspections will be performed when the flow in the pipelines is at a minimum to improve our ability to observe all defects present along the pipeline. Because we are inspecting larger diameter pipelines, we will conduct CCTV investigations during night-time hours between 9:00 p.m. and 5:00 a.m. Our team will utilize NASSCO PACP trained and certified personnel for identifying operational and structural defects within pipelines during inspection activities.

Our team has completed projects of similar scope and size using Granite XP software while exporting defect information to the City's Hansen Maintenance Management database. We have the capability to use sonar and laser profiling as well as optical scanning methods to quickly accomplish the inspection tasks and speed pipeline assessment.

We understand that the City uses a Hansen Maintenance Management database to track work orders and system information. BC proposes to deliver all inventory and inspection data in a format that can be used to populate the Hansen database in an as automated manner as possible. We will work with the City to utilize the Hansen Work Order module system to capture work tasks performed by field crews. All field activities will log event date/time occurrences (arrived at site, fixed problem, left site, etc.) and record all related work actions, including resources and types of equipment used, for future analysis.

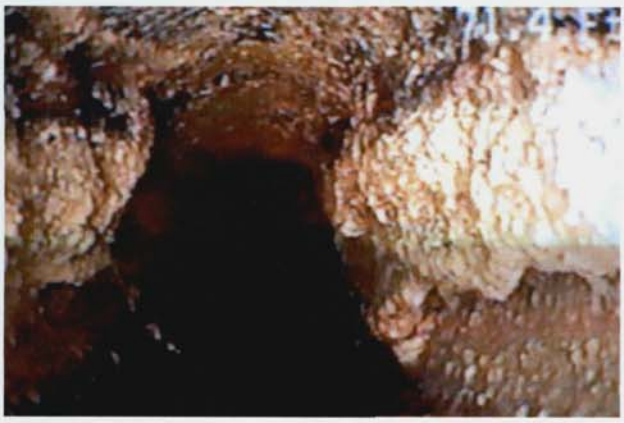
At project initiation, one of first orders of business will be to have discussions with the City and then provide recommendations for systematic coding of defects and observations discovered in the field during the course of inspections. Brown and Caldwell and ProPipe are familiar with the nationally recognized NASSCO PACP and MACP. Our team members are trained, certified, and we have NASSCO-certified trainers on staff. It is our strong desire to deliver to the City data of verifiable high quality that can be readily integrated into the Hansen databases.

Deliverables for this work task will include documentation of inspection defect and observation coding options with a recommendation for the system to be used.

Cleaning of Sewer Lines

CCTV inspection of sewer lines will be accomplished without cleaning of the lines whenever practical. Cleaning of sewer lines will be recommended when attempts at CCTV inspection have been made from both upstream and downstream directions without full success. Other lines recommended for cleaning will be where the pipeline is significantly obstructed by debris, effectively preventing visual inspection and defect observance with CCTV. A list of lines recommended for cleaning will be provided to the City. The proposed method and equipment for the cleaning operations will also be provided to the City for review and approval. Our team will document the type of debris, and estimate the volume that should be removed to restore the pipeline to full operating flow capacity. We will also try to determine the reason for the debris buildup and recommend potential preventive maintenance procedures that may help reduce or eliminate the debris in the future.

A timely project completion enables the owner to avoid conditions, such as deteriorated and potentially failed sewer pipelines.



Grease at flow line

The following table is a summary of the condition assessment programs completed by members of our proposed project team.

Project Team Qualifications												Pipe Material				
Client	Project Name	Year	Linear Feet	Diameter	CCTV	Sonar	Laser	Manhole Investigations	Condition Assessment	Rehab Recommendations	ProPipe	Concrete	T-Lock	VCP	PVC	RPMP
City of Peoria, AZ	Cactus Road Condition Assessment	2009	14,000	18- to 33-inch	●				●	●	●					
City of Phoenix/ SROG, AZ	Unlined Concrete Sewer Assessment, Phase 2	1998	180,880	24- to 90-inch	●	●		●	●	●	●	●				
	Unlined Concrete Sewer Assessment, Phase 3	2002	127,000	24- to 90-inch	●				●	●	●	●				
	Categories A and B Reinvestigations	2003	75,000	24- to 90-inch	●				●	●	●	●				
	Sky Harbor PCCP Investigation	2002	3,000	84-inch	●				●	●	●	●				
	Priest Drive	1995	3,150	48-inch	●					●	●	●				
City of Mesa, AZ	Southern Avenue Interceptor	2006	22,300	33- to 36-inch	●			●	●	●	●	●				
	Baseline Sewer	2006	26,800	30- to 42-inch	●		●	●	●	●	●	●	●	●		
	Superstition Freeway	2003	8,000	8- to 36-inch	●				●	●			●			
	Baseline Siphon	2004	765	24- to 42-inch	●				●	●	●		●			
	Reinforced Plastic Mortar Pipe	2005	20,000	12- to 27-inch	●		●	●	●	●	●					●
City of Tempe, AZ	Unlined Concrete Sewer Assessment	1998	44,800	18- to 48-inch	●	●		●	●	●	●	●	●	●		
	Priest Drive Investigation	1998	14,500	48-inch	●				●	●	●	●				
	Southern Avenue	2005	41,000	36- to 48-inch	●			●	●	●		●				
	Priest/Southern Reinvestigation	2009	22,200	36- to 48-inch	●			●	●	●	●	●				
Pima County, AZ	Northwest Outfall, 15" and Larger	2003	1,200,000	15- to 72-inch	●	●		●	●	●	●	●	●	●	●	
	Northwest Outfall, 15" and Smaller	2008	300,000	6- to 15-inch	●				●	●	●	●		●	●	
	Re-inspection, Grade 4 Sewer Pipes	2006	75,000	15- to 72-inch	●				●	●	●	●	●	●		
City of Winslow, AZ	Sewer Rehabilitation and Replacement Program	1998	30,000	6- to 12-inch	●	●		●	●	●	●					
City of Bisbee, AZ	Collection System Assessment and Rehabilitation	2003	24,600	6- to 18-inch	●				●	●	●	●		●		
City of Prescott, AZ	North Prescott Regional Force Main	2005	18,500	14-inch	●				●	●	●					
Clark County, NV	Vitrified Clay Pipe Condition Assessment	2006	109,394	8- to 48-inch	●			●	●	●		●		●	●	
	Unlined RCP Phase 2	2004	100,000	18- to 48-inch	●	●		●	●	●	●	●				
	T-Lock Investigation	2007	50,000	36- to 84-inch	●				●		●		●			
City of Las Vegas, NV	Phase 3	2003	77,000	18- to 36-inch	●				●	●	●	●		●	●	
City of Dallas, TX	Demonstration Project	2008	7,225	30-inch	●	●	●		●	●	●	●				
City of Portland, OR	Large Diameter	1996	300,000	24- to 120-inch	●	●		●	●	●		●		●		
City of Cleveland, OH	Easterly	1998	528,000	36-inch	●	●		●	●	●		●		●	●	
	Southerly	1999	400,000	15- to 162-inch	●	●		●	●	●		●		●	●	
	Westerly	1997	211,200	24- to 90-inch	●	●		●	●	●		●		●	●	

The City will then authorize the cleaning work efforts, or require the coordination of City cleaning crews under Task Order(s). BC will coordinate and communicate with the City to identify a suitable disposal site. Cleaning record logs, including disposal records, will be provided to the City.

Quality Control

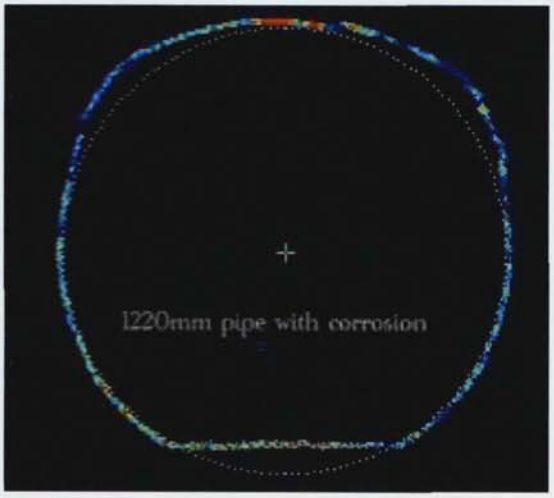
BC has developed a Quality Assurance/Quality Control (QA/QC) program as part of our internal project management system that ensures high quality data and deliverables for all phases of the project. **Thayne Loendorf** will lead the QA/QC effort including data gathering, defect coding, condition assessment, and rehabilitation recommendations.

As part of the QA/QC program, BC staff will escort the CCTV crew(s) during the initial phase of the project to ensure defects are being coded properly and that video and sound quality are acceptable and in the proper format. We will also confirm that the work is being performed in accordance with the scope of work, and with the standard of care expected for this type of work. The data generated from this condition assessment will be used to recommend potentially significant CIP work. It is, therefore, absolutely necessary to ensure that the data has been through the QA/QC process. CCTV data that does not comply with the City's requirements will not be accepted and will be recaptured at the contractor's expense.

Task 3: NASSCO Certified Review and Condition Assessment

The condition assessment process starts with each pipeline segment being scored for both structural and operational condition and is based on CCTV video, defect reports, and inspection logs captured using the CCTV defect coding system. Initial recommendations for each pipe segment and manhole will be made using categories defined in the scope of work.

Past experience with similar assignments ensures a team of experts ready to deliver the right solutions.



New technology laser/sonar profiling adds critical information during assessment

Preliminary condition screening procedures limit the overall work effort by distinguishing between pipelines deemed to be in good-to-excellent condition (high integrity pipe), pipelines that require immediate repair, and pipelines that are categorized to be in poor-to-fair condition. Pipelines that are assessed to be in the poor-to-fair condition group are further evaluated by experienced engineering staff to develop a final defect condition rating.

In addition to pipeline condition assessment, pipeline criticality will also be assessed and will influence repair prioritization of the system.

Higher criticality pipelines typically include high profile areas, pipelines crossing rivers, canals, and other water features, pipelines crossing railroads, highways, major streets, and major interceptor sewers. Repair prioritization recommendations will be developed based on condition assessment, criticality assessment, and the grouping of similar recommended rehabilitation work in order to minimize CIP expenditures by consolidating work into competitive bid packages.

Specific recommendations for repairs will be developed for each pipe segment and manhole, and will utilize the results of the hydraulic analysis of the flow conditions in each of the pipelines provided by the City. The BC team will provide specific recommendations for repair, rehabilitation, replacement, or additional sewer to be constructed for capacity relief. The type(s) of rehabilitation that will be recommended will depend on the various factors.

Our team has a vast toolbox of rehabilitation methods, and we will work with the City to ensure the best solutions are applied to the City's rehabilitation program.

The BC team will develop an Engineer's estimate of probable cost for general and specific repair recommendations generated from this investigation.

Task 4: Final Report and Electronic Submittals

BC will generate a clear and concise final report containing a summary of the work completed, organized data from reconnaissance, manhole locating, manhole inspections, CCTV inspections, condition assessment, inspection data prioritization, and recommendations. We have found that representing some of this data on color-coded GIS maps is beneficial for developing a rehabilitation program and visually determining trends of where issues are occurring in the system. In addition, an overall rehabilitation priority list with recommendations and associated construction costs will be delivered to the City for use in the CIP program. The final report and supporting data will be delivered in hard copy form and electronically on a portable USB external hard drive with all of the CCTV inspection logs and video files organized to the City's specifications.

BC's approach to pipeline condition assessment focuses on solutions tailored to your needs, drawing on more than 60 years of pipeline design and rehabilitation, and the expertise of our technical experts assigned to your project.

B. Firm's Experience/Similar Projects

BC's combination of service, technology, and client focus has led to a strong, steady growth and a consistent place among the top-ranked firms in the industry. In 2008, BC was ranked third among the "Top 50 Trenchless Design Firms" by *Trenchless Technology*. BC's infrastructure evaluation capabilities provide a firm foundation for precise identification of defects and effective programs of rehabilitation. Because we can accurately identify problems, we're able to set logical priorities and have the financial know-how to take the process a step further – to assist utilities in formulating optimum programs of capital investment.

BC works with our clients to determine the most economically advantageous options, then assists in the preparation and implementation of an assessment and rehabilitation program that mitigates potential problems and minimizes capital expenditures. Our approach will help the City analyze the integrity of its sewer system and identify the most cost-effective means of rehabilitating damaged or deficient sewer lines and manholes.

Cactus Road Condition Assessment – City of Peoria, Arizona

The City of Peoria hired BC to provide condition assessment and summarize the need for future maintenance and rehabilitation on approximately 14,000 linear feet of 18- and 30-inch pipeline. The City had already conducted an internal inspection of the pipeline and was concerned with their initial findings.

BC studied the inspection video and provided the City a report with our condition assessment results and rehabilitation recommendations. Defects observed during this investigation included a hole in the 18-inch pipeline along Cactus Road and several areas of possible deformation along the 30-inch pipeline.

CCTV Inspection and Pipeline Condition Assessment – Pima County Wastewater Management Department, Arizona

To date, the Pima County CCTV inspection program is the largest individual CCTV program initiated by any municipality in Arizona.

Pima County Wastewater Management Department (PCWMD) owns and operates eight collection and treatment systems within a 370-square mile service area in eastern Pima County. The wastewater conveyance system includes approximately 3,000 miles of public sanitary sewers, of which approximately 230 miles are considered trunk or interceptor sewers (15-inch internal pipe diameter and larger).

PCWMD initiated a comprehensive inspection and condition assessment of its collection system for two reasons:

1. Never completed a comprehensive investigation beyond limited segments.
2. Anticipated the release of Capacity, Management, Operations and Maintenance (CMOM) regulations.

PCWMD retained BC to oversee the CCTV inspection. Using existing inspection records, the team determined the current structural integrity of Pima County's lined and unlined RCP trunk and interceptors and identified the location of all connections (e.g. lateral, house service, building service connections) on the involved public sanitary sewer. PCWMD authorized BC to continue the inspection on the remainder of its sewerage system.

As part of this work, we:

- Inspected and provided a visual record of the conveyance system interior, including condition assessment of the unlined and lined reinforced concrete pipe.
- Obtained an acoustic sonar record of the interior of selected siphons within the conveyance system.
- Verified the type, material, and size of the pipe, as well as documented the existing conditions, structural integrity, and deficiencies.
- Determined the location of sewer connections.
- Identified immediate maintenance requirements, including making recommendations for rehabilitation/replacement of pipelines.

This project involved significant coordination between BC, ProPipe, and PCWMD to ensure emergency and priority Grade 5 reaches were immediately reported and addressed; access to difficult to reach alignments were scheduled and arranged in advance (i.e., private property, golf course, orchard, Indian reservation access); and, locating/scouting alignments was performed in advance of the CCTV crew.

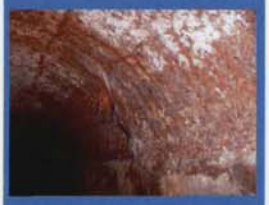
We successfully completed this project under budget and on schedule, while also providing siphon cleaning and NASSCO pipeline condition assessment training to PCWMD staff. In addition, *this project was awarded an Honor Award from the American Consulting Engineers Council (ACEC) for Engineering Excellence.*

CCTV Re-Inspection and Pipeline Condition Assessment of Grade 4 Sewer Pipe, Phases 1, 2, and 3 to 5 – PCWMD, Tucson, Arizona

BC, with subconsultant ProPipe, inspected approximately 230 miles of 15-inch diameter and larger interceptor/trunk sewer lines and assigned NASSCO condition grades. Of the 230 miles, 72,757 linear feet were determined to be condition priority Grade 4 (Poor). The team performed a re-inspection of these line segments, which was completed on time and under budget, allowing PCWMD staff to develop a rehabilitation program based on the condition assessment of alignments ranked by priority and severity.

CCTV Inspection and Pipeline Condition Assessment Sewer Pipe, Less than 15-inch – PCWMD, Tucson, Arizona

PCWMD retained BC to oversee the first year of this multi-year inspection effort. Approximately 300,000 linear feet of 6- to 15-inch pipelines were inspected as part of this project. BC teamed with ProPipe to complete the inspection and utilized Granite XP software to record defect information. We used PCWMD's Hansen Data Management system to export pipeline information used during the inspections and exported the completed inspection back to the Hansen database. The team verified existing pipe material and size, as well as documented the structural and operational conditions. Immediate maintenance requirements were identified and recommendations for rehabilitation/replacement were included in our report.



Unlined Concrete Sewer Condition Assessment – City of Phoenix, Arizona

The majority of the unlined concrete sewers in the City of Phoenix are large diameter pipelines installed in the mid-1960s. They are generally characterized with flat slopes and warm temperatures, which produce high concentrations of hydrogen sulfide gas and results in severe pipeline corrosion. The City's Unlined Concrete Sewers Condition Assessment Program is an ongoing program, which identifies and responds to structural and operational problems that can impair sewer function and potentially impact public health and safety. BC was selected to conduct Phase 2 of this Program. The primary purpose of the Phase 2 study was to inspect, assess, and provide a CIP for required structural improvements to 180,880 feet of large diameter unlined concrete sewers.

Condition Assessment. The type and severity of the observed defects provided the basis for calculating two separate condition grades, structural and operational, for each pipe segment. These grades ranged from I (requires immediate repair) to V (excellent). Economic and noneconomic factors were evaluated for each pipe reach of unlined concrete sewer in order to determine the potential impact a failure would have to the community.

Database Management. The pipe defect information was entered into a database, which allowed the City a method to track and update the condition of the sewers while also providing a screening tool to identify pipeline condition ranking. Each pipe segment was numerically identified and a record created to track the condition grade and criticality. The database was developed in Microsoft Access to run on a standard Windows operating system.

Rehabilitation Recommendations. The findings of the inspections and condition assessment formulated the sewer rehabilitation recommendations. While individual pipe reaches could have been rehabilitated as single activities, the cost of contracting and mobilization generally made it costly. To limit the overall costs, segments were grouped into projects based on criticality, condition, and location.

Pipeline Inspection, Phase III – City of Phoenix, Arizona

In 2002, BC was hired for Phase III of the Program to inspect and evaluate 127,000 linear feet of large diameter unlined concrete sewers and to develop a prioritized rehabilitation/ replacement program. The pipelines inspected in this project comprised all previously identified large diameter unlined concrete sewers in the City of Phoenix and Sub-Regional Operating Group (SROG) systems that had not been rehabilitated. BC inspected and evaluated the condition of all known unlined concrete pipes 24 inches in diameter and above in the City and SROG systems, including the Salt River Outfall (SRO). The SROG, a regional interceptor, and other major sewers examined are critical due to the volume of sewage they transport. The consequence of a failure in one of these large diameter lines would be immense. Many lines are located under or parallel to major transportation corridors including Interstate 10 and Interstate 17. Failure of any of these lines could result in significant liability. Structural failure of these pipes would negatively impact the City in terms of public safety, and the resulting spills of raw sewage would lead to significant enforcement actions by regulatory agencies. Phase III was completed in April 2003.

Collection System Assessment and Rehabilitation Design and Construction Management – City of Bisbee, Arizona

The City of Bisbee was under a Consent Order from the Arizona Department of Environmental Quality (ADEQ) for violations stemming from their wastewater treatment and collection system. The collection system consists of 239,000 linear feet of 4- to 18-inch diameter sewer lines. BC was hired to design and prepare construction contract documents to modify and rehabilitate the existing sewage conveyance system, as well as design a new lift station. During review of the CCTV inspections, inaccuracies were confirmed in defect identification and necessity of rehabilitation. Reviewing the CCTV tapes reprioritized the rehabilitation recommendations and saved the client significant money. In addition, a CCTV inspection of another 23,000 feet of pipe was conducted and uncovered major defects in several trunk lines that were previously considered to be in good condition. BC's scope of services was then expanded to include additional assessment investigations to characterize the "true" condition of the collection system.

BC prepared rehabilitation/replacement recommendations based on the condition of the sewer; location of the sewer relative to structures; location of sewer relative to historic areas and features; location of sewer relative to commercials districts; suitability for rehabilitation; and condition of sewers relative to current design codes and requirements (e.g., minimum and maximum slopes, minimum sewer diameters, minimum cover requirements, maximum manhole spacing, minimum water line and sewer separations, and manhole construction standards).

Sewer Condition Assessment – City of Winslow, Arizona

The City of Winslow hired BC to direct the inspection of 30,000 linear feet of 6- to 24-inch diameter vitrified clay pipe, evaluate the existing condition and determine the corrective measures, and rehabilitate approximately 500 manholes. BC performed CCTV inspection to provide remote observation of the interior conditions of the pipelines. A video record of the inspection identified areas needing rehabilitation, such as protruding service laterals, leaking or fractured joints, and cracked pipes. Several sewer segments could not be CCTV-inspected due to protruding service laterals.

Sewer Inspection and Assessment. The information gathered during the CCTV inspection was reviewed to analyze the structural condition of the sanitary lines and determine whether the sewers should be rehabilitated. The structural condition was graded using an internal-condition grading system established by Water Research Center (WRC) in the Sewerage Rehabilitation Manual, which consists of five grades ranging from acceptable structural condition to collapsed or collapse imminent. The majority of the defects were minor joint displacements and cracks, which are associated with the bell of the pipe section and have probably been there since construction.

Based on the internal-condition grade, the majority of the sewer system inspected is in relatively good condition with only minor defects at the joints. BC also recommended developing a regular cleaning schedule. Regular cleaning and maintenance of the sewers will maximize the available capacity of the system and reduce odor and backup problems. The project rehabilitated and/or replaced approximately 8,000 linear feet of sewer replacement, 22,000 linear feet of sewer rehabilitation, and rehabilitation of 500 manholes.

Unlined Concrete Sewer Condition Assessment – City of Tempe, Arizona

The City of Tempe retained BC to perform sewer condition assessment of the City's large diameter sewer pipelines. The primary purpose of this study was to investigate, categorize, and identify high-priority, large diameter sewers (greater than 24 inches) that are in need of rehabilitation. The objectives were to identify the structural condition of each manhole; review the defects revealed through the CCTV inspections; assess the condition of the pipes and assign a condition category representing the worst defect in the pipe segment; prioritize replacement/rehabilitation efforts based on current condition and sewer criticality; develop budgetary costs and a capital improvement plan for rehabilitation of each pipe; and sonar inspection of 2,762 feet of 18- to 21-inch siphon for invert erosion and deposition.

Pipe and Manhole Inspection. BC performed CCTV inspection of approximately 42,000 linear feet of 27- through 48-inch sewers and 2,800 feet of 18- and 21-inch siphons. The sewers consisted of reinforced concrete pipe (RCP), VCP, and PVC lined.

Condition Assessment. Sewer defects identified during the inspections were recorded by the type and severity of the observed defect. This classification provided the basis for assigning structural condition grades, ranging from 1 (excellent condition) to 5 (requires immediate repair) in accordance with WRC standard CCTV defect classifications.

Recommendations. Roughly 25,000 linear feet of unlined concrete sewers were categorized. The City of Tempe is currently developing plans to fund the rehabilitation of the unlined concrete sewers identified in the program. BC recommended a phased approach to the rehabilitation for the City's pipelines.

Condition Assessment for Sewer Pipes Crossing Superstition Freeway – City of Mesa, Arizona

The City of Mesa contracted BC to conduct a condition assessment of nearly 8,000 linear feet of sewer crossings under the Superstition Freeway ranging in size from 8 to 36 inches in diameter. The purpose of the project was to investigate the conveyance system, identify existing structural and operational problems, and recommend necessary repairs or maintenance to ensure system operation. When the Condition Assessment was completed, the overall condition grade for each reach of sewer was derived based on both the structural and operational condition of the collection system. In general, all the segments reviewed and assessed were in poor to fair structural condition. Structural defects observed included extensive loss of liner and heavy corrosion. Several reaches appeared to have low flows but still exhibited significant liner loss, increasing the possibility of continued deterioration. Most of the operational defects ranged from mineral deposits and grease buildup along the sidewalls.

Clark County Water Reclamation Department (CCWRD) Vitrified Clay Condition Assessment Phase I – Las Vegas, Nevada

The objective of the project was to assess the condition of the sewers, identify sewers in need of immediate attention, and develop an action plan for continued monitoring or rehabilitation of the inspected pipelines. The first phase of this project entailed providing an overall assessment program of the CCWRD's collection system. The program evaluated the physical condition of existing manholes and vitrified clay pipe (ranging in size from 12 to 36 inches in diameter). BC assessed 109,394 linear feet of pipeline and inspected 303 manholes. The pipelines were inspected and assessed using NASSCO PACP condition assessment standards.

CCWRD Unlined Concrete Sewer Condition Assessment Phase II – Las Vegas, Nevada

Clark County Water Reclamation District began their condition assessment of unlined concrete pipelines in 2002 with the Phase I project that inspected 40,000 linear feet. In 2003, CCWRD began the emergency rehabilitation of unlined concrete pipelines in and around the "Strip Corridor" to avert the possibility of a collapsed pipe and an SSO that would affect the activities along Las Vegas Boulevard. In 2004, CCWRD selected BC to inspect and assess the condition of approximately 100,000 linear feet of unlined concrete pipe. This project was also the first to employ the NASSCO system of pipeline assessment that is currently being used by the District.

Large Diameter Sewer Inspection, Maintenance Management, Data Coordination, and Mapping Support, City of Portland – Bureau of Environmental Service (BES), Oregon

BC inspected and assessed the City of Portland's large diameter sewers ranging in size from 24 to 120 inches. In the first six months, more than 300,000 feet of large diameter brick and concrete pipelines were inspected. These inspections identified segments requiring maintenance and rehabilitation to reduce potential failures. BC managed the inspection of the pipelines using CCTV, scanning sonar, and walkthrough inspection technologies.

Our team provided data coordination services and seismic imaging services. Each pipe was inspected for structural and service condition, as well as prioritization of future rehabilitation projects. BC assessed the City's database needs for inventory and data management of the sanitary, combined, and surface storm water facilities systems. We developed a computer program for the collection system that incorporated the facility inventory, television inspections, condition assessments, critical rating, seismic vulnerability, and rehabilitation criteria into maintenance management. The system improved the overall efficiency of managing a maintenance program and benefits the other programs associated with sewer collection (e.g., source control, emergency response to spills, etc.)

Westerly District Interceptor Inspection, Condition Assessment, and Rehabilitation Recommendations – Northeast Ohio Regional Sewer District (NEORSD), Ohio

The project focused on developing sewer defect identification and information collection guidelines, performing condition evaluation, screening potential rehabilitation techniques, and assisting the District in achieving the overall goal of reducing system failures. The inspection guidelines developed for this project worked well among all contractors and resulted with few major problems during the inspections. Manhole and sewer inspection information gathered as part of the project was assembled into a custom, nonproprietary database that is robust and flexible enough for use in other District service areas and for future applications such as GIS mapping, maintenance management systems, and hydraulic modeling. Seismic Tomographic Imaging (STI) was used for the assessment of approximately 4,000 feet of the Westerly Sewer along the CONRAIL, and 350 feet of the Walworth "B" branch under Interstate-90.

Easterly District Interceptor Inspection and Evaluation – NEORSD, Ohio

This important project for NEORSD was the second in a series of three projects to gather data and document information on the District's sewer systems. The project covered the Easterly Interceptor district and required locating, surveying, inspecting, and assessing the condition of 100 miles of pipeline and more than 2,000 manholes. The inspection included interceptors, combined sewer overflows (CSO), and dry weather outlets (DWO). The data collected on the Easterly project served as the basis for future assessment of the District's overall infrastructure, and assisted the District in achieving the overall goal of reducing combined sewer overflows into the natural waters.

Southerly District Interceptor Inspection and Evaluation – NEORSD, Ohio

BC's successful work with the District's Westerly and Easterly interceptors led to the "Southerly" project in 1999, which included inspection, evaluation, condition assessment and rehabilitation recommendations for 400,000 feet of pipelines and 1,250 manholes. The Southerly project was undertaken to provide inventory information and assess the current condition of interceptors, CSO pipelines, and DWO and manholes throughout the Southerly Service Area. Inspection information was used to establish sewer rehabilitation priorities as well as serve as a basis for developing an interceptor and CSO conveyance rehabilitation capital improvement program for the coming years. The pipelines include interceptors varying in size from 15 to 162 inches, constructed of brick, concrete, vitrified clay pipe, corrugated metal pipe, and clay tile. Three inspection methods were used including CCTV, scanning sonar, and walkthrough inspections. Inspection forms were prepared to ensure the inspection information would be uniform throughout the project.

An important document for this project was the sewer defect identification manual. This manual ensured that subsequent District inspections were performed in a similar manner and the defects were encoded correctly and consistently. A comprehensive condition assessment program was developed and integrated into the database. The project database included all of the logged data from the inspection contractors, reference to available digital video and photographs, condition assessment information, recommendations, and planning level cost information for each inspected pipe and manhole. A GIS map of the service area was prepared, linked to the database to provide convenient and quick access to the information, and the GIS map was automatically updated when changes to the database were made.

The following table is a summary of the condition assessment programs completed by members of our proposed project team.

Project Team Qualifications												Pipe Material				
Client	Project Name	Year	Linear Feet	Diameter	CCTV	Sonar	Laser	Manhole Investigations	Condition Assessment	Rehab Recommendations	ProPipe	Concrete	T-Lock	VCP	PVC	RPMP
City of Peoria, AZ	Cactus Road Condition Assessment	2009	14,000	18- to 33-inch	●				●	●	●					
City of Phoenix/ SROG, AZ	Unlined Concrete Sewer Assessment, Phase 2	1998	180,880	24- to 90-inch	●	●		●	●	●	●	●				
	Unlined Concrete Sewer Assessment, Phase 3	2002	127,000	24- to 90-inch	●				●	●	●	●				
	Categories A and B Reinvestigations	2003	75,000	24- to 90-inch	●				●	●	●	●				
	Sky Harbor PCCP Investigation	2002	3,000	84-inch	●				●	●	●	●				
	Priest Drive	1995	3,150	48-inch	●					●	●	●				
City of Mesa, AZ	Southern Avenue Interceptor	2006	22,300	33- to 36-inch	●			●	●	●	●	●				
	Baseline Sewer	2006	26,800	30- to 42-inch	●		●	●	●	●	●	●	●	●		
	Superstition Freeway	2003	8,000	8- to 36-inch	●				●	●			●			
	Baseline Siphon	2004	765	24- to 42-inch	●				●	●	●		●			
	Reinforced Plastic Mortar Pipe	2005	20,000	12- to 27-inch	●		●	●	●	●	●					●
City of Tempe, AZ	Unlined Concrete Sewer Assessment	1998	44,800	18- to 48-inch	●	●		●	●	●	●	●	●	●		
	Priest Drive Investigation	1998	14,500	48-inch	●				●	●	●	●				
	Southern Avenue	2005	41,000	36- to 48-inch	●			●	●	●		●				
	Priest/Southern Reinvestigation	2009	22,200	36- to 48-inch	●			●	●	●	●	●				
Pima County, AZ	Northwest Outfall, 15" and Larger	2003	1,200,000	15- to 72-inch	●	●		●	●	●	●	●	●	●	●	
	Northwest Outfall, 15" and Smaller	2008	300,000	6- to 15-inch	●				●	●	●	●		●	●	
	Re-inspection, Grade 4 Sewer Pipes	2006	75,000	15- to 72-inch	●				●	●	●	●	●	●		
City of Winslow, AZ	Sewer Rehabilitation and Replacement Program	1998	30,000	6- to 12-inch	●	●		●	●	●	●					
City of Bisbee, AZ	Collection System Assessment and Rehabilitation	2003	24,600	6- to 18-inch	●				●	●	●	●		●		
City of Prescott, AZ	North Prescott Regional Force Main	2005	18,500	14-inch	●				●	●	●					
Clark County, NV	Vitrified Clay Pipe Condition Assessment	2006	109,394	8- to 48-inch	●			●	●	●		●		●	●	
	Unlined RCP Phase 2	2004	100,000	18- to 48-inch	●	●		●	●	●	●	●				
	T-Lock Investigation	2007	50,000	36- to 84-inch	●				●		●		●			
City of Las Vegas, NV	Phase 3	2003	77,000	18- to 36-inch	●				●	●	●	●		●	●	
City of Dallas, TX	Demonstration Project	2008	7,225	30-inch	●	●	●		●	●	●	●				
City of Portland, OR	Large Diameter	1996	300,000	24- to 120-inch	●	●		●	●	●		●		●		
City of Cleveland, OH	Easterly	1998	528,000	36-inch	●	●		●	●	●		●		●	●	
	Southerly	1999	400,000	15- to 162-inch	●	●		●	●	●		●		●	●	
	Westerly	1997	211,200	24- to 90-inch	●	●		●	●	●		●		●	●	

The Right Team
The Right Choice

Commitment: A project team dedicated to delivering cost-effective pipeline inspections and condition assessments, along with constructible solutions for pipeline repairs/rehabilitation.

Innovation: A creative experienced team with an in-depth knowledge of the best inspection methods to provide repair/rehabilitation solutions that meet the City's needs and requirements.

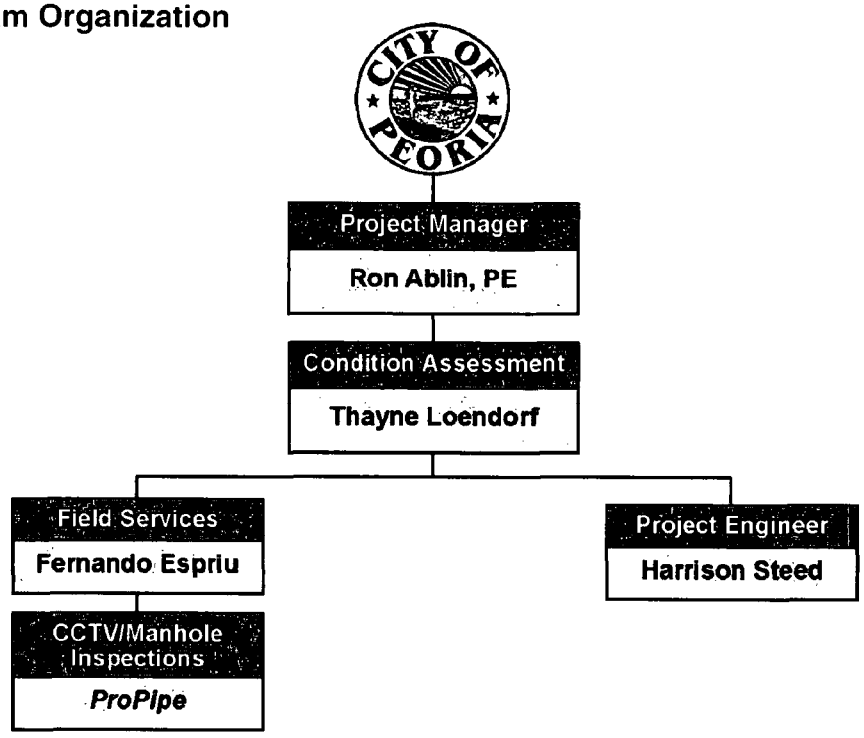
Collaboration: A client-focused approach with productive communication and City collaboration to ensure smooth task order delivery.

Responsiveness: A local, hands-on Project Manger with leadership and communication skills that ensure successful execution of tasks and timely resolution of issues.

C. Staff's Capabilities and Assignments

The experts we have assembled to form the BC team have a thorough understanding of state-of-the-industry pipeline and manhole inspection, assessment, and rehabilitation techniques. We also have the professional relationships with the most respected pipeline inspection contractors and a strong working knowledge of all the methods and materials currently being employed. We are well known for working closely with our clients to determine the most economically advantageous options, and helping to prepare and implement an inspection, condition assessment, and rehabilitation program that mitigates problems and minimizes expenditures.

Project Team Organization



Ron Ablin, PE – Project Manager

Mr. Ablin has 20 years of experience in the assessment, design, and construction of water and infrastructure projects, specializing in the area of assessment and rehabilitation. He is the Infrastructure Practice Leader for BC's Southwest Region and has completed similar pipeline assessment and rehabilitation programs for the cities of Phoenix, Reno, Scottsdale, Tempe, Mesa, Nogales, Baltimore, Dallas, Washington D.C., and Winslow.

Mr. Ablin will oversee the development of this project and will review deliverables to ensure a timely and quality product.

Thayne Loendorf – Condition Assessment

Mr. Loendorf has over 28 years of practical experience in management, inspection, assessment, rehabilitation design, and construction involving infrastructure projects. He has supervised field crews and developed an expertise for solving problems caused by changing site conditions. Mr. Loendorf's work includes large pipe inspections, condition assessments, and rehabilitation projects for 24 different municipalities located throughout the United States including the programs in Phoenix, Mesa, Tempe, Peoria, Pima County, NEORSD, Portland and CleanWater Services. He is a NASSCO-certified trainer for both the PACP and MACP coding systems.

Mr. Loendorf will be responsible for executing the condition assessment program. His experience working with clients using Granite XP and Hansen Maintenance Management Databases will help facilitate the accurate transfer of data from the field to the City system.

Fernando Espriu – Field Services

Mr. Espriu has over eight years of experience working with field crews and performing CCTV inspections. He has trained crews and worked with them to find solutions to overcome problems. Mr. Espriu's work includes small and large pipe inspections, condition assessment, and rehabilitation projects. He is confined space entry trained, a Certified NASSCO PACP Trainer, and has conducted CCTV investigations on thousands of miles of sanitary and storm sewer pipe in numerous locations across the United States. Mr. Espriu is a Granite XP trained operator who uses his extensive background in pipeline inspection to overcome obstacles encountered during the inspection process.

Mr. Espriu will work with the field crews to ensure that the data collected meets the needs of the condition assessment program. He has unsurpassed hands-on expertise in large diameter inspections, which will be valuable in identifying methods and equipment to produce quality inspections.

Harrison Steed, PE – Project Engineer

Mr. Steed has eight years of engineering experience in water and wastewater design, rehabilitation, and planning. His expertise involves medium and large diameter pipeline rehabilitation by trenchless methods including the recent rehabilitation of the 60-inch diameter Crosstown Interceptor in Las Vegas, Nevada. Mr. Steed has worked on projects totaling approximately 170,000 feet of pipe for design rehabilitation and 300,000 feet of pipe for condition assessment. He is a certified NASSCO PACP trainer. His expertise extends to software applications including hydraulic modeling, database analysis, and geographical information systems.

Mr. Steed will work closely with other team members to ensure data integrity. He will review assessment data and help formulate rehabilitation recommendations.

ProPipe Professional Pipe Services (ProPipe)

CCTV and Manhole Inspections

ProPipe provides cleaning and inspection of pipelines in a variety of sizes ranging from 4 to 108 inches in diameter. ProPipe uses NASSCO PACP- and MACP-certified personnel for all inspections and is familiar with the City's sanitary sewer system. They will be using Granite XP to record defect information during the inspections and have experience merging inspection data to the Hansen Maintenance Management database. ProPipe may provide specialty inspections for this project, as-needed, including laser profiling of hard to CCTV lines such as poly vinyl chloride, ABS and other plastic/resin pipes. Laser allows direct measurement of deformation and ovality, CCTV does not. Sonar profiling may be employed for pipelines full of water due to debris or because of sags along the alignment. Sonar allows inspection of surcharged lines and measurement of debris depth and volume.

ProPipe can also provide non-traditional CCTV inspection using the IBAK Panoramo 3D Optoscanner that has two high-resolution digital cameras, one in the front and rear of the transporter, helping to increase the efficiency of inspection by traveling up to 70 feet per minute. The IBAK Panoramo SI system may be used for non-traditional manhole inspections. It allows a complete optical scan of the entire interior of a manhole in one vertical step, which only takes a few minutes. The optical scan produces a still picture of the entire manhole interior, capturing condition and all defects.

ORIGINAL

CONTRACT AMENDMENT
Change Order

Solicitation No. P10-0033 Page 1 of 7
Description: Trunk Line Risk Assessment Program

Amendment No. One (1) Date: 6/30/10

Materials Management Procurement
9875 N. 85th Ave., 2nd Fl.
Peoria, AZ 85345
Telephone: (623) 773-7115
Fax: (623) 773-7118

Buyer: Jennifer Miller

Project No.: UT00295 Agreement Date: 4/24/10

Project Description: Trunk Line Risk Assessment Program Completion Date: 4/24/11

Change Order Type: ☐ Owner Initiated ☐ Errors & Omissions ☐ Unknown Conditions ☒ Phased Award

The changes as shown on the attached sheet are hereby made to the contract.

Contract Price Change:

Original Contract Price:	$245,025.00
Total of previous change orders:	0
Original contract price plus previous change order(s):	$245,025.00
The contract price due to this change order will be increased by:	$287,440.00
The new contract price including this change order will be:	$532,465.00

Contract Time Change:

The contract time will be increased by 0 days.

Contractor hereby acknowledges receipt and agreement. A signed copy shall be filed with the City of Peoria, Materials Management Division.

Signature	Date	Typed Name and Title	Company Name
	7-12-10	Ronald L. Ablin Vice President	Brown and Caldwell

Address	City	State	Zip Code
201 E. Washington St, #500	Phoenix	AZ	85004

Attested By:

Mary Jo Waddell, City Clerk

Brian Biesemeyer Deputy Utilities Director

Jennifer Miller, Contract Administrator

14C 070610
CC Number

Approved by: Herman F. Koebergen, Materials Manager

LCON 04010A

Ellen Van Riper, Assistant City Attorney

Contract Number

Approved as to Form: Stephen M. Kemp, City Attorney

The above referenced Contract Amendment is hereby Executed

7-26-10, at Peoria, Arizona

Carl Swenson, City Manager

Official File

City Seal

Copyright 2003 City of Peoria, Arizona (Rev 01/05/09)

LCON04010A

EXHIBIT A

CITY OF PEORIA
TRUNK LINE 15-INCH AND LARGER
RISK ASSESSMENT PROGRAM

SCOPE OF WORK

March 2, 2010

The scope of work includes the investigation and assessment for sewer segments 15-inch and larger within the City of Peoria (City). The investigation will include up to 400,000 linear feet (lf) of 15- to 42-inch sanitary sewer pipeline. The purpose of this investigation is to identify the current conditions within the pipelines and recommend future rehabilitation, replacement and reinvestigation needs for the pipeline.

Task 1.0 Project Management

1.1 Project Management. Management of the overall project including staff resources, subconsultants, and client correspondence to assure timely project completion.

- A project schedule will be prepared with milestones agreed to with the City.
- Brown and Caldwell will coordinate the work efforts of the inspection team to ensure that all required permits are obtained and traffic control issues are resolved to facilitate the Closed Circuit Television (CCTV) inspection of the pipelines.
- Detailed monthly invoices will be provided to document all work performed.
- All Project deliverables will be reviewed and edited by Brown and Caldwell for quality assurance prior to submittal to the City.

1.2 Project Meetings.

- A Kickoff Meeting will be held to define milestones, respective responsibilities, and provide for coordination between the City and the inspection team. During this meeting, we will interview City staff to obtain system operational/maintenance information, GIS requirements, data transfer procedures, and requirements for providing updated collection system information.
- Up to four progress meetings will be conducted throughout the project to update the City on the project status and to discuss any issues that may arise during the project execution.
- Meeting minutes will be prepared for all meetings and submitted to all meeting attendees.

1.3 Data Collection. The City will provide the following information, where available, to Brown and Caldwell:

- The existing inventory of the project sewers from the City's quarter section maps and/or GIS database
- Sewer as-built drawings

- Historical CCTV videos
- Maintenance/Repair records
- Historical Manhole inspection logs and photos
- Flow data for the past year for use with field investigations.

1.4 Prioritize Inspections. Using information gathered during the staff interviews and our review of available data and collection system information we will establish the prioritized list for the sewer inspections. We will review the inspection prioritization with City staff and establish a finalized inspection plan. Our inspection team will maintain and provide a 2 to 3 week look-ahead schedule once inspections start to keep the City personnel informed on the location of pending inspections.

1.5 Traffic Control. In general, our inspection team will attempt to access the sewers from manholes requiring minimal traffic control. Where traffic control is needed, the team will obtain all required permits and provide traffic control plans to the City. Traffic control will be performed in accordance with the City's traffic control requirements.

1.6 Field Work Safety Plan. Develop a Field Work Safety Plan (FWSP) for the field inspections to be conducted in accordance with the City's and Occupational Safety and Health Administration requirements. Plan shall include the project summary, key personnel and responsibilities, site specialties, and safety checklists. A copy of the FWSP will be maintained on site with Brown and Caldwell personnel.

Task 2.0 Field Investigation

2.1 Field Reconnaissance. Monthly field reconnaissance investigations will be conducted with the City to review upcoming inspection sites and identify any initial concerns that may impact the completion of the project. During the site visits, manholes will be located and marked with the manhole number. Where buried and/or stuck manholes are encountered, the City shall be responsible for opening and, if required, raising these manholes in order to provide access.

2.2 CCTV Inspections. The CCTV investigations will be conducted by NASSCO PACP certified inspectors to collect data pertaining to the condition of the sewer and identification of specific defects identified. For purposes of this agreement, a total inventory of up to 400,000 linear feet is included.

- The CCTV work will be digitally acquired using Granite XP software using Hansen defect codes and recorded directly to portable hard drives in the inspection vehicles.
- All defects will be identified, viewed and documented in the defect log and photo's will be taken to document defects and general pipeline conditions.
- Any defects that present an eminent danger will be immediately brought to the City's attention within 24 hours of the initial identification.
- The inspection team will attempt to quantify the amount of debris along each pipe segment during the inspections. If there is too much debris in the pipeline to complete an inspection the inspection team will notify the City. The City will be responsible for any cleaning activities required to complete the inspection process.

2.3 Manhole Investigations. The inspection team will provide an initial visual assessment of all manholes used as part of the pipeline investigation. The CCTV camera will also be used to pan the inside of manholes we pass through during the inspection process. Any defects observed within the manholes that present an eminent danger will be immediately brought to the City's attention within 24 hours of the initial identification. Our findings will be summarized in our report.

Task 3.0 Condition Assessment

3.1 Pipeline Condition Assessment. Based on the identified defects, the pipe condition will be assessed using peak and/or total defects. Brown and Caldwell personnel will assign a condition grade for each manhole to manhole segment of sewer pipeline based on a scale of one to five as follows:

Category	Condition	Defect Description	Condition Grade Implication
I	Excellent	Minor Defects	Failure unlikely in the foreseeable future
II	Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years
III	Fair	Moderate defects that will continue to deteriorate	Pipe may fail in 10 to 20 years
IV	Poor	Severe defects that will become Grade 5 defects within the foreseeable future	Pipe will probably fail in 5 to 10 years
V	Immediate Attention	Defects requiring immediate attention	Pipe has failed or will likely fail within the next 5 years

We will make recommendations for additional investigations at the progress meetings which may include sonar and laser if conditions within the pipeline warrant and the additional information is needed to complete rehabilitation recommendations.

3.2 Manhole Condition Assessment We will use the data collected during the pipeline inspections to provide a condition grade for manholes actually viewed. The rating will be based on the following:

Manhole Rehabilitation Rating	Recommended Action
Good	Re-Assess in 5 – 10 years
Fair	Re-Assess in 3 – 5 years
Poor	Rehabilitate in 0 – 5 years

3.3 Identify Rehabilitation Ratings. Brown and Caldwell will develop rehabilitation ratings for each sewer segment inspected. This rehabilitation rating will account for the internal condition assessment and the consequence of failure. The final rating will include a recommendation for rehabilitation/replacement based on the estimated life and potential for failure based solely on observations of the CCTV investigations. We will also make recommendations for future inspections and any operational/maintenance activities that may be required such as root removal and cleaning to remove grease.

3.4 Cost Estimates. Planning level cost estimates will be provided for any future rehabilitation and/or reinvestigation that is recommended as part of the program.

Task 4.0 Technical Memorandum

4.1 Draft Memorandum. A memorandum will be prepared to summarize the results of the condition assessment. The Consultant shall prepare and submit five copies of the draft memorandum for review by the City.

4.2 Review Meeting. The Consultant will attend one review meeting to review City comments for incorporation into the final memorandum.

4.3 Final Memorandum. The Consultant shall incorporate the City's comments and submit five copies of the final memorandum to the City. Copies of all inspection logs, video, and forms will be provided to the City at the completion of the project.

Task 5.0 Data Integration

5.1 Hansen to Granite XP. Brown and Caldwell will work closely with our inspection team to ensure a smooth transition of data between the Hansen Maintenance software and the Granite XP system used to conduct the investigations.

- The inspection team will work directly with City personnel to download the Hansen collection system data to the project hard drive and then upload this data to the Granite XP database in the inspection vehicles. The City will assign work order numbers that will be used by Hansen to track the data.
- At intervals during the inspection to be determined during the Kickoff Meeting the inspection data will be transferred back to the Hansen system.

5.2 Assessment Ratings to GIS. Brown and Caldwell will work closely with the City GIS personnel to ensure a smooth transfer of the condition ratings to the City GIS system.

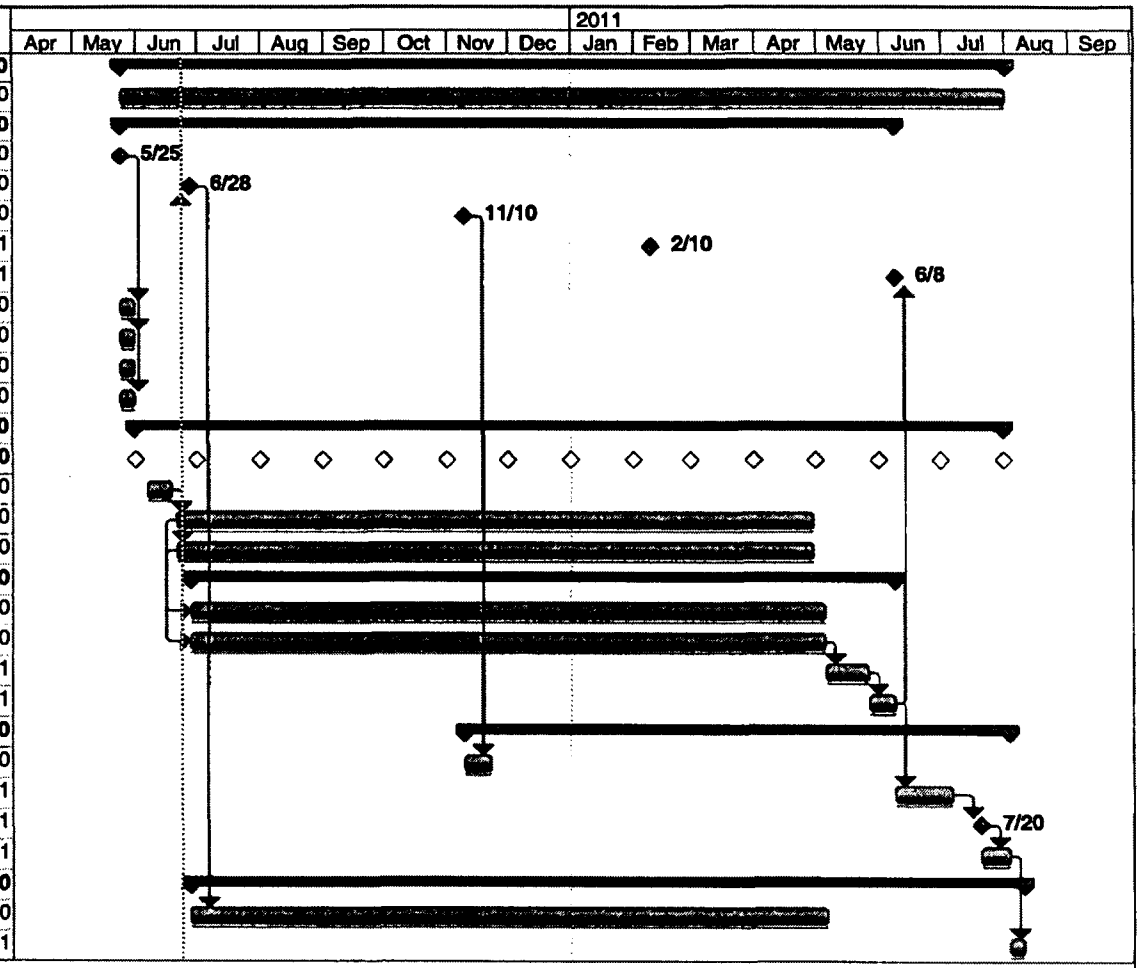
- Pipeline Condition Grades of 1 to 5 will be assigned for both structural conditions and operational conditions within each segment of pipeline.
- A color code will be assigned to each Condition Grade for display purposes in the GIS system.

Our proposed scope does not include a full manhole investigation, but rather a quick assessment of manholes based upon the view we will have from the CCTV camera located at the invert of the manhole. The cost of a full manhole investigation with complete video of each manhole would cost approximately $67,000.

City of Peoria -- Trunk Line Risk Assessment Program

Phase	Phase Description	Loendorf, Thayne A	Qualls, Shawntel	Ablin, Ronald L	Espriu, Fernando M	Steed, Harrison T	Wernet, Caren J	Simms, Michael J	Gruber, Allison B	Total Labor Hours	Total Labor Effort	Reproduction	Other Travel	Pro Pipe Cost	Total Expense Cost	Total Effort
		PM	PA	PIC	Field Tech	Engr	WP	GIS	GIS Tech							
010	**Project Management**	121	17	22	44	5	11	4	12	**236**	**38,337**	0	500	0	**500**	**38,837**
011	Project Management	96	16	8	0	0	8	0	0	**128**	21,704	0	0	**0**	**0**	**21,704**
012	Project Meetings	10	0	10	4	4	2	4	4	**38**	6,764	0	200	**0**	**200**	**6,964**
013	Data Collection	2	0	0	16	0	0	0	8	**26**	3,370	0	200	**0**	**200**	**3,570**
014	Prioritize Inspections	12	0	4	16	0	0	0	0	**32**	5,036	0	100	**0**	**100**	**5,136**
015	Traffic Control	0	0	0	8	0	0	0	0	**8**	944	0	0	**0**	**0**	**944**
016	FWSP	1	1	0	0	1	1	0	0	**4**	519	0	0	**0**	**0**	**519**
020	**Field Investigation**	60	0	0	370	0	0	0	0	**430**	**54,520**	0	600	240,000	**240,600**	**295,120**
021	Field Reconnaissance	0	0	0	50	0	0	0	0	**50**	5,900	0	300	**0**	**300**	**6,200**
022	CCTV Investigations	60	0	0	320	0	0	0	0	**380**	48,620	0	300	**240,000**	**240,300**	**288,920**
030	**Condition Assessment**	168	0	22	558	248	0	0	0	**996**	**136,340**	0	110	0	**110**	**136,450**
031	Pipeline Assessment	80	0	12	500	80	0	0	0	**672**	87,608	0	0	**0**	**0**	**87,608**
032	Manhole Assessment	8	0	0	10	8	0	0	0	**26**	3,748	0	110	**0**	**110**	**3,858**
033	Identify Rehab Rating	40	0	2	40	80	0	0	0	**162**	23,648	0	0	**0**	**0**	**23,648**
034	Cost Estimate	40	0	8	8	80	0	0	0	**136**	21,336	0	0	**0**	**0**	**21,336**
040	**Technical Memorandum**	32	0	14	0	56	20	20	100	**242**	**36,648**	500	110	0	**610**	**37,258**
041	Draft Memorandum	20	0	8	0	40	12	20	90	**190**	28,580	250	0	**0**	**250**	**28,830**
042	Review Meeting	4	0	4	0	0	1	0	0	**9**	1,799	0	110	**0**	**110**	**1,909**
043	Final memorandum	8	0	2	0	16	7	0	10	**43**	6,269	250	0	**0**	**250**	**6,519**
050	**Data Integration**	40	0	8	40	0	0	28	40	**156**	**24,580**	0	220	0	**220**	**24,800**
051	Granite XP to Hansen	16	0	4	40	0	0	12	0	**72**	10,764	0	110	**0**	**110**	**10,874**
052	Rating to GIS	24	0	4	0	0	0	16	40	**84**	13,816	0	110	**0**	**110**	**13,926**
	GRAND TOTAL	**421**	**17**	**66**	**1,012**	**309**	**31**	**52**	**152**	**2,060**	**290,425**	**500**	**1,540**	**240,000**	**242,040**	**532,465**

ID	Task Name	Duration	Start
1	**Task 1.0 Project Management**	**310 days**	**Tue 5/25/10**
2	1.1 Project Management	310 days	Tue 5/25/10
3	**1.2 Project Meetings**	**272 days**	**Tue 5/25/10**
4	Kick Off Meeting	0 days	Tue 5/25/10
5	Status Meeting - Pilot Review	0 days	Mon 6/28/10
6	Status Meeting - Butler Basin	0 days	Wed 11/10/10
7	Status Meeting - Beardsley Basin	0 days	Thu 2/10/11
8	Status Meeting - Jomax Basin	0 days	Wed 6/8/11
9	1.3 Data Collection	1 wk	Tue 5/25/10
10	1.4 Prioritize Inspections	1 wk	Tue 5/25/10
11	1.5 Traffic Control	1 wk	Tue 5/25/10
12	1.6 Field Work Safety Plan	1 wk	Tue 5/25/10
13	**Task 2.0 Field Investigations**	**304 days**	**Tue 6/1/10**
14	**2.1 Field Reconnaissance**	**304 days**	**Tue 6/1/10**
30	Pilot Study	2 wks	Mon 6/7/10
31	2.2 CCTV Inspections	225 days	Mon 6/21/10
32	2.3 Manhole Investigations	225 days	Mon 6/21/10
33	**Task 3.0 Condition Assessment**	**248 days**	**Mon 6/28/10**
34	3.1 Pipeline Condition Assessment	224 days	Mon 6/28/10
35	3.2 Manhole Condition Assessment	224 days	Mon 6/28/10
36	3.3 Identify Rehabilitation Ratings	3 wks	Fri 5/6/11
37	3.4 Cost Estimates	9 days	Fri 5/27/11
38	**Task 4.0 Technical Memorandum**	**191 days**	**Wed 11/10/10**
39	Butler Basin Memorandum	9 days	Wed 11/10/10
40	4.1 Draft Memorandum	1 mon	Thu 6/9/11
41	4.2 Review Meeting	0 days	Wed 7/20/11
42	4.3 Final Memorandum	2 wks	Thu 7/21/11
43	**Task 5.0 Data Integration**	**293 days**	**Mon 6/28/10**
44	5.1 Hansen to Granite XP	225 days	Mon 6/28/10
45	5.2 Assessment Ratings to GIS	1 wk	Thu 8/4/11



Brown AND Caldwell

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

\\bcphx01\Projects\Peoria, City of\139232 - Trunk Line Risk Assessment Program\Deliverables\Meeting Minutes-Agendas\Mtg Min 052610 Kick-off Schedule.mpp\Wed 6/23/10