



**PURCHASING ITEM  
FOR  
COUNCIL AGENDA  
Memo No. CA10-037**

**1. Agenda Item Number:**  
**17**

**2. Council Meeting Date:**  
September 10, 2009

**TO: MAYOR & COUNCIL**

**3. Date Prepared:** August 10, 2009

**THROUGH: CITY MANAGER**

**4. Requesting Department:** Municipal Utilities

**5. SUBJECT:** Award a project agreement to Carollo Engineers for the Sewer Assessment - Phase 5, Project No. WW1001-101, in an amount not to exceed \$526,100.

**6. RECOMMENDATION:** Staff recommends that Council award a project agreement to Carollo Engineers for the Sewer Assessment - Phase 5, Project No. WW1001-101, in an amount not to exceed \$526,100.

**7. BACKGROUND/DISCUSSION:** The Wastewater Master Plan identified an on-going need to evaluate, prioritize, and repair sewer lines and manholes within the City's collection system. A Sewer Evaluation Study was conducted in November 2005 as part of the Master Plan project, which resulted in a multi-year sewer management program. This is the fifth project phase to be completed under that program and will allow the City to remain in compliance with the Capacity Management Operations Maintenance regulations (CMOM).

This project provides for the continuation of the sewer system assessment, which will identify the structural condition of the sewer collection system at various locations throughout the City of Chandler so a prioritized program of rehabilitation, repair, and replacement can be enacted and structural failures can be prevented. This will be based on the recommendations of the Sewer Assessment – Phase 4 and City staff. The inspections will be accomplished through closed circuit television (CCTV) inspection of sewer pipelines and manned entry inspections for the sewer manholes.

**8. EVALUATION PROCESS:** On September 11, 2008, Council approved the second one-year contract extension to Carollo Engineers for the Annual Permitting, Study, & Design Services for Water/Wastewater Facilities contract EN0718-101. Staff has reviewed the scope of work, billing rates, and total fee for this project, compared them to historical costs and similar projects, and has determined that they are acceptable.

**9. FINANCIAL IMPLICATIONS:**

Cost: \$526,100  
Savings: None  
Long Term Costs: None

**Fund Source:**

<u>Acct. No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
611.3910.0000.6817.10S266	Wastewater Bond	Sewer Assessment and Rehabilitation	FY 09/10	\$526,100

**10. PROPOSED MOTION:** Move that Council award a project agreement to Carollo Engineers for the Sewer Assessment - Phase 5, Project No. WW1001-101, in an amount not to exceed \$526,100, and authorize the Mayor to sign the contract documents.

**ATTACHMENTS:** Location Map, Project Agreement

**APPROVALS**

**11. Requesting Department**

*Robert Mulvey for*  
Robert Mulvey, Assistant Municipal Utilities Director

**13. Department Head**

*Dave Siegel*  
Dave Siegel, Municipal Utilities Director

**12. City Engineer**

*Sheina Hughes for*  
Sheina Hughes, Assistant Public Works Director/City Engineer

**14. City Manager**

*W. Mark Pentz*  
W. Mark Pentz

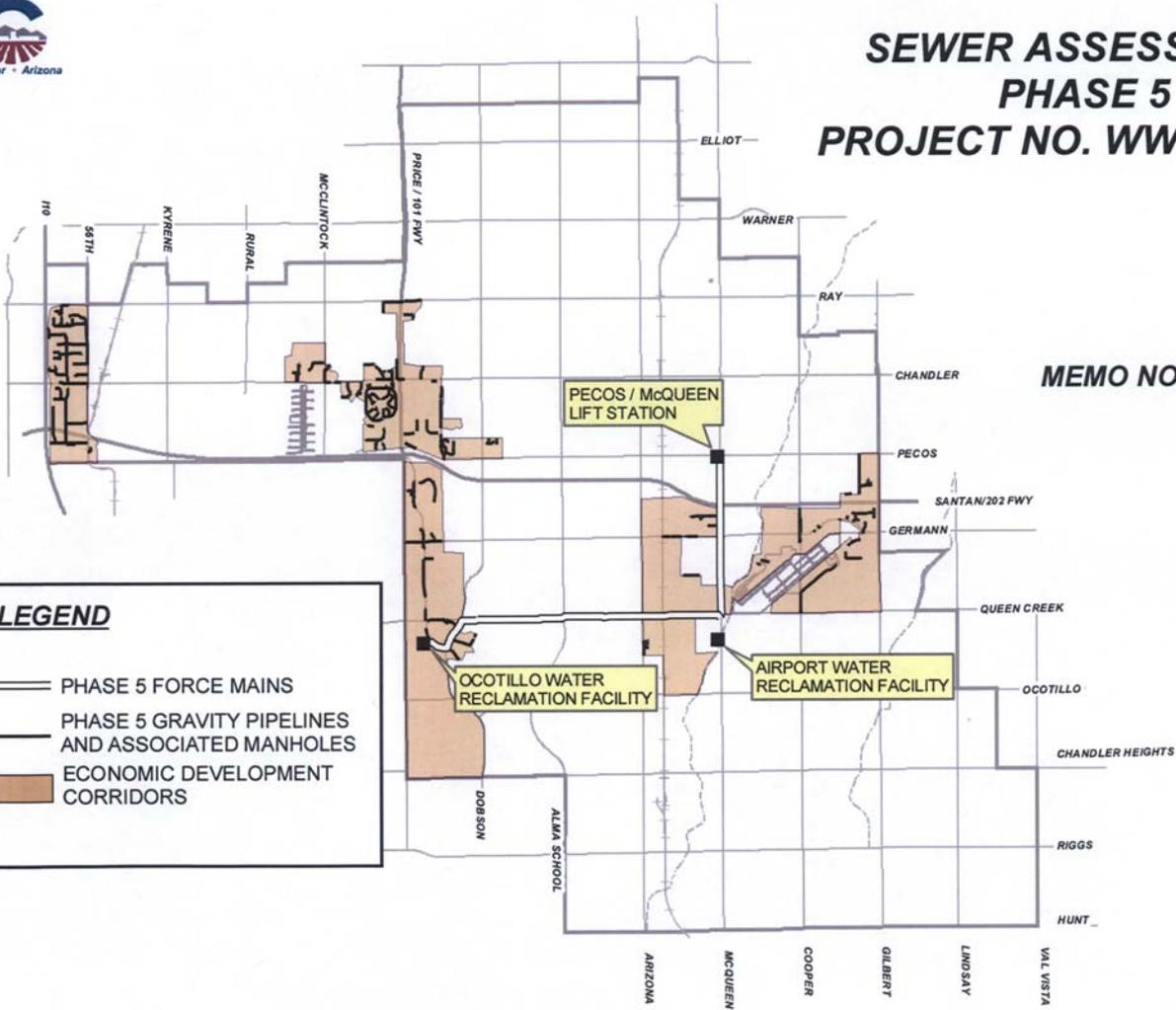


# SEWER ASSESSMENT PHASE 5 PROJECT NO. WW1001-101

MEMO NO. CA10-037

**LEGEND**

- == PHASE 5 FORCE MAINS
- PHASE 5 GRAVITY PIPELINES AND ASSOCIATED MANHOLES
- ECONOMIC DEVELOPMENT CORRIDORS



0 0.4 0.8 1.6 Miles

**PROJECT AGREEMENT  
PURSUANT TO ANNUAL CONTRACT NO. EN0718-101**

**AGREEMENT NO: WW1001-101**

This AGREEMENT is made this            day of            2009, by and between the City of Chandler, a municipal corporation (hereinafter referred to as "CITY") and Carollo Engineers, a corporation in the State of Arizona (hereinafter referred to as "Annual Consultant") and is a project agreement entered into pursuant to Annual Contract No. EN0718-101.

CITY and Carollo Engineers, in consideration of the mutual covenants herein set forth, agree as follows:

**ARTICLE 1. DESCRIPTION OF WORK**

This project is Sewer Assessment Phase 5, Project Number WW1001-101. The scope of work consists of all as more particularly set forth in Exhibit A attached hereto and incorporated herein by reference.

The Annual Consultant shall not accept any change of scope, or change in contract provisions, unless issued in writing, as a contract amendment and signed by the Contract Administrator.

**ARTICLE 2. CONTRACT PRICE**

CITY shall pay Annual Consultant for completion of the Work in accordance with the Contract Documents a fee not to exceed Five Hundred Twenty Six Thousand One Hundred Dollars (\$526,100) determined and payable as set forth in Annual Contract EN0719-101 and Exhibit B attached hereto and made a part hereof by reference.

**ARTICLE 3. CONTRACT TIME**

The contract time is Two Hundred Ten days and Annual Consultant agrees to complete all work within Two Hundred Ten (210) days of the date CITY issues a Notice to Proceed.

**ARTICLE 4. GENERAL**

This Project Agreement is entered into pursuant to Annual Contract No. EN0718-101 and the terms and conditions contained therein are incorporated herein by reference as if set forth in full.

**ARTICLE 5. ARIZONA PROCUREMENT LAW**

Compliance with A.R.S. § 41-4401. Pursuant to the provisions of A.R.S. § 41-4401, the Consultant hereby warrants to the City that the Consultant and each of its subcontractors ("Subconsultants") will comply with all Federal Immigration laws and regulations that relate to the immigration status of their employees and the requirement to use E-Verify set forth in A.R.S. §23-214(A) (hereinafter "Consultant Immigration Warranty").

A breach of the Consultant Immigration Warranty (Exhibit C) shall constitute a material breach of this Contract that is subject to penalties up to and including termination of the contract.

The City retains the legal right to inspect the papers of any Consultant or Subconsultant employee who works on this Contract to ensure that the Consultant or Subconsultant is complying with the Contractor Immigration Warranty. The Consultant agrees to assist the City in the conduct of any such inspections.

The City may, at its sole discretion, conduct random verifications of the employment records of the Consultant and any Subconsultant to ensure compliance with Contractors Immigration Warranty. The Consultant agrees to assist the City in performing any such random verifications.

The provisions of this Article must be included in any contract the Consultant enters into with any and all of its subcontractors who provide services under this Contract or any subcontract. "Services" are defined as furnishing labor, time or effort in the State of Arizona by a consultant or subconsultant. Services include construction or maintenance of any structure, building or transportation facility or improvement to real property.

In accordance with A.R.S. §35-393.06, the Consultant hereby certifies that the offeror does not have scrutinized business operations in Iran.

In accordance with A.R.S. §35-391.06, the Consultant hereby certifies that the offeror does not have scrutinized business operations in Sudan.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first written above.

This Agreement will be effective on this \_\_\_\_\_ day of \_\_\_\_\_, 2009.

CITY OF CHANDLER

FOR THE ANNUAL:

\_\_\_\_\_  
MAYOR DATE:

By: Rob Buss - 8-20-09  
Title: PARTNER

ADDRESS FOR NOTICE  
City of Chandler  
P.O. Box 4008, Mail Stop 407  
Chandler, AZ 85244-4008  
480-782-3307

ADDRESS FOR NOTICE  
Mr. Rob Buss  
Carollo Engineers  
3033 N. 44<sup>th</sup> St, Ste. 101  
Phoenix, AZ 85018

APPROVED AS TO FORM:

Phone: 602-263-9500  
Fax: 602-265-1422

ATTEST: [Signature]  
City Attorney  
\_\_\_\_\_  
City Clerk

C. B. Hoya 8-20-09  
PARTNER

## EXHIBIT A SCOPE OF WORK

### GENERAL PROJECT DESCRIPTION

The City of Chandler (City) proposes to continue with its program to inventory and evaluate their existing sewer collection system. The main purpose of this assessment study is to identify the structural condition of the sewer collection system so that a prioritized program of rehabilitation, repair, and replacement can be enacted and structural failures can be prevented. This will be accomplished through closed circuit television (CCTV) inspection of pipelines and manholes. All manholes will be inspected using manned entry inspection procedures.

In addition to the collection system inspection and evaluation tasks, Annual Consultant shall integrate the manhole CCTV inspection files from the previous assessment Phases (1 - 4) as well as from Phase 5, into the Wincan V8 software for archiving and retrieval. By archiving the CCTV files using Wincan V8, the City will be able to readily track the condition of the inspected manholes and sewer pipelines using this information as a benchmark.

The work to be performed for the project consists of the following tasks:

- Task 1 - Project Management Services
- Task 2 - Development of Inspection Priorities
- Task 3 - Sewer System Inspections
- Task 4 - Sewer System Evaluation
- Task 5 - Integration of Manhole CCTV Files into Wincan V8.
- Task 6 - Deliverables
- Task 7 - Special Services
- Task 8 - Sewer Flow Monitoring

### SCOPE OF SERVICES - PHASE 5

#### TASK 1. PROJECT MANAGEMENT SERVICES

Annual Consultant shall perform various project management and monitoring activities throughout the Project duration, as delineated in the following tasks.

##### 1.1 Project Management

Annual Consultant shall provide project management services to include directing the activities of the project team members (including Subcontractors), regularly monitoring progress of the work and the budget, preparing progress and activity reports, communicating with the City staff on technical issues and problems encountered, schedule updates, and monitoring and updating the project schedule as appropriate.

##### 1.2 Project Progress Meetings

This task includes a total of six (6) project progress meetings to be held with City staff at the Municipal Utilities Department (MUD) Complex conference room. The progress meeting will review efforts completed to date, provide project progress updates, and gather continued direction and feedback from the City. Annual Consultant shall prepare and distribute agendas prior to and notes following each meeting.

#### TASK 2. DEVELOPMENT OF INSPECTION PRIORITY

##### 2.1 Development of Inspection Priority

Pipes and manholes will be selected for CCTV inspection based on discussions with City staff and from the recommendations of the Sewer Assessment Study - Phase 4 project. The goal of this task is to develop a prioritization for the physical inspection work plan, and to allocate the CCTV and manhole inspection budgets to the areas of highest priority.

#### TASK 3. SEWER SYSTEM INSPECTIONS

Annual Consultant shall provide coordination for the inspection program, making arrangements for meetings as necessary, and keep City staff informed of the work progress.

The Subcontractors shall provide all traffic control required to inspect the sewer pipelines and manholes identified under this work.

### 3.1 Develop GIS Maps for Field Inspections

Annual Consultant shall develop GIS-based maps to show the manhole/pipe configuration and intersection details for each proposed inspection. It is anticipated that the Subcontractors will use these maps to develop their site-specific inspection plans and need for traffic control measures.

### 3.2 Coordinate Field Inspection Activities

Annual Consultant shall identify the pipe segments to be televised and will prepare information packets for the field crews (Subcontractors). Inspection data will be recorded on the forms using the defect condition codes identified in previous phases of the Study. The Subcontractor(s) will provide all equipment required for the CCTV inspections, including pan-and-tilt cameras and digital recording of the inspection on a CD-ROM.

### 3.3 Conduct CCTV Pipeline Inspections

The pipeline inspection program will consist of the physical inspection of the pipelines using current CCTV technology without manned entry. Cleaning of sewer pipelines, if required, and subsequent disposal of debris at the designated landfill, will be included in the Subcontractors allowance amount. Cleaning, however, will be limited to the level needed to perform CCTV inspection, not to the level of being totally cleaned. Continuous recording of the interior to the pipelines will be performed by CCTV equipment and software compatible with Wincan V8 software.

### 3.4 Conduct CCTV Manholes Inspections

The manhole inspection program will consist of the manned entry inspection of each manhole.

- A Manhole Inspection Form will be completed for each inspected manhole. This information will then be entered into the project database.
- Field analyses for H<sub>2</sub>S of the wastewater will be conducted as part of this effort in conjunction with atmospheric testing of the ambient air in the manholes, and this data will be recorded on the Manhole Inspection Form. Wall and bench penetrations will be recorded for each manhole accessed.

## TASK 4. SEWER SYSTEM EVALUATION

### 4.1 Prioritize Rehab or Replacement

Annual Consultant shall utilize the rating and prioritization approach developed during the previous phases of the Study.

For sewer pipes, based on the condition assessment of the pipe during the CCTV phase, a numerical score will be developed for each pipe segment using the database. The individual pipe segments will then be prioritized for rehabilitation or replacement in descending order of pipe score.

Manholes will be assessed with a slightly different score method, but the process will be similar. The manholes will also be organized by action and descending score.

### 4.2 Identify Rehabilitation and / or Replacement Projects

After developing a prioritized list of sewer pipelines and manholes requiring rehabilitation or replacement, Annual Consultant shall group the pipelines and manholes into rehabilitation and / or replacement projects. This grouping will be based on the estimated construction cost of rehabilitation or replacement, and in conjunction with City staff recommendations.

## TASK 5. INTEGRATION OF MANHOLE CCTV FILES INTO WINCAN V8

### 5.1 Collecting Phases 1 through 4 CCTV Files

Annual Consultant shall collect all available manhole CCTV inspection files for Phases 1 through 4 in preparation for linking them with the GIS module of the Wincan V8 software. Phase 1 CCTV inspection files are mostly in VHS tape format, whereas Phase 2, 3 and 4 are on CD in digital format. Files in VHS tape format will be converted into digital format prior to attaching them to the Wincan V8 software.

### 5.2 Collecting Phase 5 CCTV files

As the manhole inspection Subcontractor performs the CCTV inspections of each manhole and delivers the required CCTV in digital format, Annual Consultant shall include the Phase 5 manhole inspections with the Phase 1 through 4 CCTV files.

### 5.3 Organizing and Linking the CCTV Files

After collecting the CCTV inspection files, Annual Consultant shall organize the files using the same plan as for the sewer pipeline inspections, namely, by sewer system collection basin. All inspection phases will be placed in an external hard drive that will be used in conjunction with the Wincan V8 software.

## TASK 6. DELIVERABLES

### 6.1 Draft and Final Reports

The deliverables for the Sewer Assessment Study - Phase 5 includes both a Draft and Final Report. Annual Consultant shall submit a total of six (6) copies of the Draft Report for City review and comments. The Draft Report will include tables, maps, figures, photographs, and narrative describing the work performed and the recommendations made. The Draft Report will include the following:

- Summary plan for pipeline and manhole condition rating and prioritization.
- Numerical score for each pipe segment and manhole inspected.
- List of pipe segments and manholes in order of descending score.
- Pipe segment and manhole lists in condition categories.
- Recommendations for future action.
- Recommendations for Capital Improvement Program (CIP) budgets.

Upon receipt of comments from the City, Annual Consultant shall finalize and submit six (6) copies of the Final Report and two (2) copies of the Final Report in pdf format on CD to the City for distribution.

## TASK 7. SPECIAL SERVICES

### 7.1 CM Phase Engineering Services for Sewer and Manhole Rehab

The City continues to bid and award sewer and manhole rehabilitation projects that Annual Consultant has designed. The latest project is comprised of manholes and is planned to be awarded in the fall of 2009. Under this Task, Annual Consultant shall provide construction management phase services in support of that project. These CM Phase engineering services will include submittals review and approval, responding to Requests for Information (RFIs), preparing Design Modifications, reviewing pay applications, reviewing Change Orders (if requested by the City), periodic site visits to observe the progress for the work, and Project Closeout.

## TASK 8. SEWER FLOW MONITORING

### 8.1 Engineering Services for Sewer Flow Monitoring

In order to obtain accurate flow recordings at specific locations with the sewer collection system, Annual Consultant shall provide flow monitoring plans and oversight of sub consultant activities for up to four (4) locations with the collection system. It is assumed that flow-monitoring equipment will be rented and installed by a local vendor for a maximum of seven (7) calendar days per each location monitored. The goal of this duration of monitoring is to obtain weekday and weekend diurnal flow values. From this information, local collection system average day and peak hour performance factors will be developed. This information will assist the project team in determining the need for sewer system upgrades as well as for reporting actual flow rates in those locations of the collection system.

### 8.1 Draft and Final Reports

The deliverables for Task 8 Sewer Flow Monitoring includes both a Draft and Final Technical Memorandum. Annual Consultant shall submit a total of six (6) copies of the Draft Memorandum for City review and comments. The Draft Report will include tables, figures, photographs, and narrative describing the work performed and the findings discovered. The Draft Memorandum will include the following:

- Summary of findings.
- Recommendations for future action.
- Recommendations for Capital Improvement Program (CIP) budgets, if any.

Upon receipt of comments from the City, Annual Consultant shall finalize and include the Final Memorandum as a chapter in the Final Phase 5 Study Report, in pdf format on CD to the City for distribution, in the quantities listed under Task 6 - Deliverables.

#### PROJECT ASSUMPTIONS

The following assumptions are considered inclusive to the Scope of Services:

1. The City has concluded its 4th-year inspection of its 15-inch and larger diameter pipelines and associated manholes and now desires to inspect its major 12-inch diameter sewer pipelines and associated manholes. This Phase 5 Study will inspect a target goal of 25 to 30 miles of pipelines and their associated manholes (the "Project"), approximately 330 manholes. Also included under Phase 5 will be approximately 3 miles of 15-inch and larger diameter sewer pipeline that was inaccessible during Phase 4 due to heavy debris or roadway construction that prevented manhole entry.
2. The City also intends on performing CCTV inspections on its major force main pipelines, approximately 8 miles total.
3. Annual Consultant shall utilize the City's existing GIS for project mapping and sewer information.
4. The CCTV Field Subcontractor(s) will arrange for all required traffic control. The City will not provide assistance for traffic control.
5. Phase 5 does not include preliminary or detailed design of pipeline and manhole rehabilitation.
6. Where manholes are located in easements or residential yards, City assistance in the form of in-person notification may be necessary.
7. City assistance with sewer pipeline cleaning will be provided as possible within the City's budget and availability.

**EXHIBIT B  
FEE SCHEDULE**

Sewer and Manhole Phase Tasks		Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal	Subtotal
Hourly Rates		\$ 210.00	\$ 195.00	\$ 160.00	\$ 135.00	\$ 125.00	\$ 70.00	
<b>Task 1</b>	<b>Project Management Services</b>							
1.1	Project Management (6 months)	6	48	12	36	0	0	102
1.2	Project Progress Meetings (6 total)	3	24	12	12	0	12	63
Subtotal Task 1		9	72	24	48	0	12	165
<b>Task 2</b>	<b>Development of Inspection Priority</b>							
2.1	Development of Inspection Priority	0	8	12	24	8	8	60
Subtotal Task 2		0	8	12	24	8	8	60
<b>Task 3</b>	<b>Sewer System Inspections</b>							
3.1	Develop GIS Maps for Field Inspections	0	4	16	48	40	0	108
3.2	Coordinate Field Inspection Activities	0	12	20	28	0	0	60
3.3	Conduct CCTV Pipeline Inspections	0	12	20	28	0	0	60
3.4	Conduct CCTV Manhole Inspections	0	12	20	28	0	0	60
Subtotal Task 3		0	48	76	104	40	0	288
<b>Task 4</b>	<b>Sewer System Evaluation</b>							
4.1	Prioritize Rehab or Replacement	2	12	32	88	0	0	134
4.2	Identify Rehabilitation Projects	2	12	32	68	0	0	114
Subtotal Task 4		4	24	64	156	0	0	248
<b>Task 5</b>	<b>Integration of Manhole CCTV Files into Wincan V8</b>							
5.1	Collecting Phase 1 thru 4 CCTV files	0	2	16	24	0	0	42
5.2	Collecting Phase 5 CCTV files	0	4	12	16	0	0	32
5.3	Organizing and linking the CCTV files	1	6	24	64	0	0	95
Subtotal Task 5		1	12	52	104	0	0	169
<b>Task 6</b>	<b>Deliverables</b>							
6.1	Draft and Final Reports	4	28	56	96	24	48	256
Subtotal Task 6		4	28	56	96	24	48	256
<b>Task 7</b>	<b>Special Services</b>							
7.1	CM Phase Services-Sewer & Manhole Rehab	2	16	48	56	0	18	140
Subtotal Task 7		2	16	48	56	0	18	140
<b>Task 8</b>	<b>Sewer Flow Monitoring Services</b>							
8.1	Engineering Services for Flow Monitoring	2	16	24	24	16	0	82
8.2	Draft and Final Reports	2	20	24	48	16	12	122
Subtotal Task 8		4	36	48	72	32	12	204
<b>TOTAL SUBTOTALS (Excl. Fee)</b>		17	236	390	588	112	70	1,580
<b>TOTAL CONTRACT AMOUNT</b>								<b>\$ 1,780</b>
<b>DIRECT COST ALLOWANCES</b>								
1)	Mileage, printing / Wincan Manhole module							\$ 6,500
2)	AZ Manhole CCTV inspection subcontractor (Approximate) - manned entry approx. 330 manholes							\$ 120,000
3)	Pipeline CCTV Inspection subcontractor (Approximate) - inspection of approx. 33 miles small diameter pipeline.							\$ 120,000
4)	Renting of Sewer Flow Monitoring Equipment (Approximate)							\$ 15,000
5)	Force Main CCTV Inspection subcontractor (Approximate) - inspection of approx. 8 miles major force mains.							\$ 40,000
<b>Total Direct Cost Allowances</b>								<b>\$ 301,500</b>
<b>TOTAL CONTRACT AMOUNT</b>								<b>\$ 526,100</b>

EXHIBIT C

Contractor Immigration Warranty  
To Be Completed by Consultant Prior to Execution of Contract

A.R.S. § 41-4401 requires as a condition of your contract verification of compliance by the consultant and subconsultants with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of its employees.

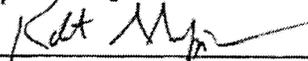
By completing and signing this form the Engineer/Annual Consultant shall attest that it and all subconsultants performing work under the cited contract meet all conditions contained herein.

Project Number: WW1001-101 Sewer Assessment Phase 5		
Name (as listed in the contract):		
Street Name and Number:		
City: Chandler	State: AZ	Zip Code:

I hereby attest that:

1. The Engineer/Annual Consultant complies with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of those employees performing work under this contract;
2. All subconsultants performing work under this contract comply with the Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214 related to the immigration status of their employees; and
3. The Engineer/Annual Consultant has identified all consultant and subconsultant employees who perform work under the contract and has verified compliance with Federal Immigration and Nationality Act (FINA), all other Federal immigration laws and regulations, and A.R.S. § 23-214.

Signature of Engineer/ Annual Consultant (Employer) or Authorized Designee:

  
\_\_\_\_\_

Printed Name: Robert A. Ardizzone

Title: Partner

Date (month/day/year): 8-20-2009