AGREEMENT REGARDING ALERT GAGING SYSTEM MAINTENANCE SERVICES FOR 2002 FLOOD SEASON

Agreement No. 02-01.15

THIS AGREEMENT, made this	day of	, 2002, by and
between URBAN DRAINAGE AND FLOOD CO	ONTROL DISTRICT (1	hereinafter called "DISTRICT")
and (hereinafter called "CONSU	JLTANT") and collecti	vely known as "PARTIES";
WITNESSETH:		
WHEREAS, DISTRICT, Boulder County,	City of Boulder, Wheat	t Ridge, Lakewood, Jefferson
County, The Consolidated Mutual Water Compan	ıy, Arvada, Aurora, Dei	nver, Morrison, and Douglas
County have executed agreements to develop floor	d detection networks for	r Boulder Creek, South Boulder
Creek, Lena Gulch, Ralston Creek, Westerly Cree	ek, Toll Gate Creek, Go	ldsmith Gulch, Harvard Gulch,
Bear Creek, and Douglas County; and		
WHEREAS, DISTRICT has installed ALE	RT gaging equipment a	at a number of flood control
facilities in which DISTRICT participated in the f	funding and construction	n thereof; and
WHEREAS, DISTRICT has installed ALE	RT gaging equipment of	on the South Platte River, Cherry
Creek, and Sand Creek in conjunction with DIST	RICT's South Platte Riv	ver and Master Planning
Programs; and		
WHEREAS, DISTRICT Board of Director	s has authorized the exp	penditure of 2002 maintenance
funds to assist local governments in maintaining e	xisting flood warning s	ystems (Resolution No. 99, Series
of 2001); and		
WHEREAS, DISTRICT wishes to obtain to	he services of CONSUI	LTANT to perform system
testing, adjustments, and installations; to conduct	regularly scheduled ma	intenance activities; to perform
minor system adjustments on an unscheduled basis	s when problems develo	pp; to provide recommendations to
District when major repairs or replacements are re	equired; to conduct end-	of-season testing, equipment
removal, documentation and equipment storage; to	repair equipment or se	ecure the repair of equipment by
others; and to provide verification of system perfo	ormance by post-event f	ield measurements (hereinafter
called "PROJECT").		
NOW, THEREFORE, in consideration of t	he mutual promises cor	ntained herein, PARTIES agree as
follows:		
1. <u>EMPLOYMENT OF CONSULTANT</u>		
DISTRICT shall engage CONSULTANT a	and CONSULTANT he	reby agrees to perform the
services hereinafter set forth.		

CONSULTANT shall perform all work items set forth in Attachment No. 1. For the purpose of this

Agreement, the Scope of Services shall be limited to the equipment and locations identified in

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SCOPE OF SERVICES

Attachment No. 2.

2.

3. COST OF SERVICES

DISTRICT agrees to pay CONSULTANT a sum not to exceed
Dollars (\$) for all services described herein, subject to the terms and conditions of
Paragraph 4, unless a change in the Scope of Services is approved in accordance with
Paragraph 11.

4. METHOD OF PAYMENT

CONSULTANT shall receive twelve (12) monthly payments of		
Dollars (\$). If billings are received by the 1st of the month, payment shall be by the 25th		
of the same month. For all billings, CONSULTANT shall keep work and cost records that shall		
permit easy comparison with work performed as specified in each billing. Payments may be		
withheld pending completion of work items described in Paragraph 2. Additional compensation,		
approved in accordance with Paragraph 12, shall be based on unit prices in Attachment No. 2 or the		
cost for time and materials using rates in Attachment No. 3.		

5. <u>TIME OF PERFORMANCE</u>

CONSULTANT shall complete the Scope of Services of this Agreement according to the following schedule:

- A. Beginning-of-season installations and system start-up services described in Paragraph B.1 of Attachment No. 1 shall be completed by April 1.
- B. Routine inspections described in Paragraph B.2 of Attachment No. 1 shall be completed on an approximate 45 day incremental schedule (90 day incremental schedule applies to Station Nos. 700, 1640, 1650, 1660 and 1810) from the beginning of flood season installation (April 1). Scheduled routine inspections will occur within a time period beginning 10 days prior to and ending 10 days following calendar dates May 15, July 1 and August 15. (July 1, October 1, and January 1 dates apply to Station Nos. 700, 1640, 1650, 1660 and 1810).
- C. Unscheduled service calls will be performed as described in Paragraph B.3 of Attachment No.1.
- D. End-of-season removal, testing and storage of equipment described in Paragraph B.4 of Attachment No. 1 will occur on or after October 1.

6. SYSTEM MODIFICATIONS BY DISTRICT

DISTRICT shall notify CONSULTANT prior to performing any maintenance service, modification, adjustment, relocation, reconfiguration or any like work on or to any hardware at any remote gage site, repeater station or base station for which CONSULTANT is responsible. CONSULTANT shall provide recommendations to DISTRICT concerning any DISTRICT proposed system modification. Adequate written records of such modifications shall be maintained by DISTRICT with copies provided to CONSULTANT.

7. <u>DIRECTION OF EFFORT AND COORDINATION</u>

Notwithstanding any of the provisions of this Agreement, the Executive Director of DISTRICT will be the only individual authorized to redirect the effort or in any way amend or modify the terms of this Agreement. DISTRICT may appoint a Project Director who shall represent the Executive Director in matters related to PROJECT. All such redirection shall be transmitted in writing and directed to CONSULTANT, and shall be subject to the provisions of Paragraph 12.

8. <u>OWNERSHIP OF DATA</u>

Ownership, in paper and electronic form, of all data; maps; drawings; details, documents; special software; spreadsheets and templates; photographs; and information collected, acquired, developed, and documented under this Agreement (hereinafter called "DATA") shall be vested with DISTRICT. CONSULTANT may retain a record copy of such DATA. Should DISTRICT see fit to make use of DATA assembled under this Agreement for a use not included under the scope of this Agreement, DISTRICT will assume all subsequent liability for such use and CONSULTANT shall not make claims of liability against DISTRICT for such use.

9. OWNERSHIP OF MATERIALS AND EQUIPMENT

Ownership of materials and equipment acquired under this Agreement shall be vested with DISTRICT.

10. DURATION OF AGREEMENT

The duration of this Agreement shall be one year.

11. TERMINATION OF AGREEMENT

This Agreement may be terminated by DISTRICT and/or CONSULTANT upon seven (7) days' written notice. In the event of termination, CONSULTANT shall be paid for services performed to termination date as determined by DISTRICT. This payment shall be full satisfaction of all obligations to CONSULTANT under this Agreement.

In the event of termination or should Agreement not be renewed for the following flood season, all DISTRICT-owned materials, equipment and DATA stored by virtue of this Agreement shall be surrendered to DISTRICT by CONSULTANT before payment is made.

12. CHANGES IN AGREEMENT

DISTRICT may request changes in the scope of services of CONSULTANT. Such changes, including any increase or decrease in the amount of CONSULTANT's compensation and/or time of performance, which are mutually agreed upon by and among PARTIES, shall be incorporated in written amendments to this Agreement.

13. INSURANCE

During the performance of the work defined by this Agreement, CONSULTANT, acting as an independent contractor, shall be solely responsible for procuring and keeping in full force and effect the insurance listed below:

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<u>Insur</u>	<u>Minimum Limits</u>		
A.	Commercial General Liability	\$1,000,000 each occurrence and in the aggregate in	
		combined single limit coverage for bodily injury	
		and property damage	
B.	Professional Liability	\$250,000 each claim and in the aggregate	
C.	Automobile Liability	\$600,000 each occurrence in combined single limit	
		coverage for bodily injury and property damage	
D.	Workers' Compensation		
	1. Workers' Compensation	statutory limits required by law	
	2. Employer's Liability	statutory limits required by law	

The limits of coverage listed above are as required by DISTRICT. CONSULTANT shall evaluate individual needs regarding higher levels of insurance.

Except for Professional Liability insurance, each type of insurance procured by CONSULTANT shall provide coverage for all claims arising out of, or in connection with, any operations, work, or services performed under this Agreement by CONSULTANT, CONSULTANT's employees, subconsultants, subcontractors, agents, or representatives. CONSULTANT's Professional Liability insurance shall provide coverage for claims arising out of the negligent acts, errors and omissions of CONSULTANT in the performance of services under this Agreement. CONSULTANT may elect not to provide the above-specified coverage for the subconsultants or subcontractors. In that event, CONSULTANT shall require that the subconsultants or subcontractors procure and maintain the same insurance coverage as set forth above. All PROJECT participants shall be listed as "additionally insured" on all commercial liability insurance policy/certificates and all automobile liability insurance policy/certificates. Under this Agreement PROJECT participant is DISTRICT. Certificates of Insurance showing CONSULTANT is carrying the above-described insurance shall be provided to DISTRICT at the time of execution of this Agreement. As necessary, certificates of insurance showing the subconsultants and subcontractors are carrying the above described insurance shall be provided to DISTRICT within ten (10) days of beginning work by the subconsultant or subcontractor pertaining to this Agreement. All the certificates of insurance shall include language stating that, should the insurance policy be canceled before its expiration date, the insurance company shall provide 30 days written notice to DISTRICT. The costs of insurance shall be considered a part of the overhead costs of CONSULTANT.

14. INDEMNIFICATION

Under this Agreement PROJECT participant is DISTRICT. CONSULTANT shall indemnify and save all PROJECT participants harmless from and against claims, demands, liabilities, damages, suits, actions, or causes of action including reasonable attorney's fees and costs which may be brought or asserted against any or all of the above named on account of, by reason of, or caused by the negligent acts, errors, or omissions in the performance of the work under this Agreement by

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CONSULTANT, CONSULTANT's employees, subconsultants, subcontractors, agents, or representatives together with any liability accrued by any or all of the above-named on account thereof.

15. <u>ASSIGNABILITY</u>

This Agreement is for the expert professional services of the personnel of CONSULTANT, and is not assignable, save and except with the consent of DISTRICT, who may withhold consent at its option with or without cause.

16. APPLICABLE LAWS

This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado. Venue for any and all legal actions arising under the Agreement shall lie in the District Court in and for the County of Denver, State of Colorado.

17. NO DISCRIMINATION IN EMPLOYMENT

In connection with the performance of work under this Agreement, CONSULTANT agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified on the basis of race, color, ancestry, creed, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability and further agrees to insert the foregoing provision in all subcontracts hereunder. CONSULTANT shall provide a list of subcontractors and which of those subcontractors are Disadvantaged Business Enterprises (DBE) and the basis for determining or defining the subcontractor as a DBE. The list shall be submitted prior to final payment.

18. <u>OTHER PROVISIONS</u>

PARTIES also agree to the terms and provisions contained in Attachment Nos. 1-3 which are made a part of this Agreement:

WHEREFORE, PARTIES hereto have caused this instrument to be executed by properly authorized signatories as of the date and year first above written.

	CONSULTANT
(SEAL)	By
ATTEST:	Title
	Date

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URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

(SEAL)	By
ATTEST:	Title Executive Director
	Date

SCOPE OF SERVICES FOR: UDFCD ALERT GAGING SYSTEM OPERATION AND MAINTENANCE

A. General

CONSULTANT shall provide all services necessary for the installation, operation, maintenance and end-of-season removal and storage of the ALERT gages and equipment identified in Attachment No. 2. All technical work associated with this Agreement will be performed by a qualified electronics specialist. Maintenance of ALERT base stations shall be limited to radio equipment, data decoders and connecting cables. CONSULTANT shall not be responsible for maintenance of base station computer equipment or peripheral components. Major repairs or replacement of major electronic components are not part of this Scope of Services. Appropriate records shall be maintained by CONSULTANT of all activities performed. DISTRICT shall be provided with copies of all such records. The following briefly identifies the work items with more detailed explanations of each work item contained in Paragraphs B.1, B.2, B.3, B.4, B.5, B.6, B.7 and B.8.

- 1. Beginning-of-Season Radio Maintenance, Electronic Testing, Field Hardware Installations and System Activation, and Radio Licensing
- 2. Scheduled Routine Inspections and Data Analysis
- 3. Unscheduled Service Calls
- 4. End-of-Season Field Equipment Removal, Testing and Storage
- 5. New Installations and Radio Licensing
- 6. Spare Transmitters, Spare Sensors and Maintenance Equipment
- 7. Repair and Replacement of Equipment
- 8. Field Verification of Water Levels

B. Specific Description of Work Items

- 1. <u>Beginning-of-Season Radio Maintenance, Electronic Testing, Field Hardware Installations</u> and System Activation, and Radio Licensing
 - a. CONSULTANT shall inspect and test all equipment pertinent to remote gaging station operation including radio transmitters, antennas, cables, connectors, tipping buckets, pressure transducers, shaft encoders, weather sensors and batteries. CONSULTANT shall prepare a punch list of any deficiencies observed and recommend additional equipment and services not included in this Scope of Services.
 - b. CONSULTANT shall perform all preliminary equipment preparation necessary to assure complete operation of each gaging station. This work will include battery charging, battery replacement, calibration checks and other electronic adjustments as needed.
 - CONSULTANT shall test all electronics packages and perform minor adjustments as needed in accordance with manufacturer's RF specifications and Federal Communications Commission (FCC) requirements.
 - d. CONSULTANT shall install required hardware at each ALERT gaging station. This work will include installing electronics packages; connecting antenna and battery cables; leveling and calibrating tipping buckets; painting standpipes, weather housings

and other parts subject to corrosion; physical securing of site including antenna mounts, clamps, cables, conduits and sensors; general cleaning of site including funnel, screen and pressure transducer orifices; replacement or repair of defective pressure transducers and signal conditioning boards; and any other items deemed necessary to meet the terms of existing license agreements or varying field conditions. Specific activities performed will be site dependent. Station IDs, RF turn-on times, analog event and time mode switches, and other station configuration programming will be set per specifications approved by DISTRICT and as required to assure proper repeater operation. Serial numbers will be recorded. Test transmissions will be performed to check that gage transmitters are operating according to factory specifications and the repeaters are receiving and re-transmitting the signal. Watt meter readings will be taken and recorded. Minor RF adjustments and field calibrations will be made as needed.

- e. CONSULTANT shall complete minor adjustments and testing of all repeater stations. CONSULTANT shall maintain all power supplies including solar panels, voltage regulators and batteries.
- f. CONSULTANT shall provide all services necessary to assure proper radio and data decoder operation at ALERT base stations. This work will include testing radio receivers and data decoders and verifying data collection by the base station computer. CONSULTANT shall not be responsible for maintenance or repair of computer hardware or software. All antennas, connectors and cables will be inspected and repaired as needed. Major repairs or replacement of major electronic components shall be approved by DISTRICT prior to such action.
- g. CONSULTANT shall review the status of all existing FCC radio station licenses associated with this Agreement, except for Boulder County stations listed as Boulder Creek Flood Detection Network in Attachment No. 2, and assist DISTRICT with renewals and maintenance of such licenses in accordance with current Federal regulations.

2. Scheduled Routine Inspections and Data Analysis

- a. CONSULTANT shall conduct a physical inspection of all remote gaging stations. The mechanical functions of each site will be tested to assure proper operation. Minor mechanical and calibration adjustments will be made as needed. Minor parts such as cables, connectors, mounting hardware and batteries will be replaced as needed. Routine inspection of rain gages listed as Type P in Attachment No. 2 will occur at 90-day intervals, unless known site problems warrant a 45-day inspection cycle.
- b. CONSULTANT shall remove top section of each ALERT rain gage standpipe assembly to clean the screen, funnel and tipping bucket. This work will include leveling tipping buckets; painting of standpipes and other appurtenances to protect against corrosion and vandalism; physical securing of site including antenna mounts, clamps, cables, conduits, and sensors; general cleaning of site; inspecting antennas and connecting cables; and any other items deemed necessary to meet the terms of existing license agreements or varying field conditions. Test transmissions will be performed to assure that gage reports are being received by ALERT base stations. Pressure transducer (PT) orifices and protective housings will be checked and maintained free of mud and debris. Pressure tests will be performed on all accessible PTs. Transmitted

data will be recorded and compared with calibration tables. Defective PTs or signal conditioning boards will be repaired or replaced as needed using available spare parts. Calibration adjustments will be made as needed. Specific activities performed will be site dependent.

- c. CONSULTANT shall conduct general inspection of repeater sites and test batteries to assure proper performance. Solar panels shall be cleaned and voltage regulators adjusted as needed. Suspected problems shall be reported immediately to DISTRICT.
- d. CONSULTANT shall perform a full analysis of all rain gage data collected by DISTRICT'S ALERT Base Station at 45-day intervals commensurate with the routine inspection schedule defined in Paragraph 3.B of this Agreement. CONSULTANT shall provide DISTRICT with summary reports of these analyses. Additional selective data analyses may be requested by DISTRICT following significant rain events.

3. Unscheduled Service Calls

Upon notification by DISTRICT, or determination of potential problems from the data analysis described in Paragraph B.2.d of this Scope of Services, CONSULTANT shall make unscheduled service calls necessary to assure full system operation during the flood season. CONSULTANT shall respond to DISTRICT request for service or other problem confirmation within three (3) working days of notification or confirmation of a remote sensor or transmitter failure, within forty eight (48) hours of notification or confirmation of repeater failure and within seventy two (72) hours of notification or confirmation of radio related failure at an ALERT base station. In the event of minor part failure, CONSULTANT shall effect immediate field repairs and provide appropriate minor replacement parts. In the event of a major part failure, CONSULTANT shall install available spare parts and return failed units to the lab or factory for repair. Major repairs or replacement of major electronic components shall be approved by DISTRICT prior to such action.

4. End-of-Season Field Equipment Removal, Testing and Storage

- a. CONSULTANT shall remove electronics packages, tipping buckets and other appropriate equipment from the ALERT gaging stations not specified by DISTRICT for year-round operations. Pressure transducers and associated cables and conduits will be secured on-site. Electronic and mechanical deficiencies will be identified and either remedied immediately or recommended for future repair. Serial numbers will be checked and recorded. General cleaning of each site will be performed and all parts secured for the off-season period. This work will include the physical securing of the site; painting of standpipes, weather housings and other parts subject to corrosion; and any other items deemed necessary to meet the terms of existing license agreements or varying field conditions. Specific activities will be site dependent.
- b. CONSULTANT shall service all repeater batteries and solar panels and conduct general site inspection and testing. All repeaters shall be maintained in working condition for continuous year-round operations.
- c. CONSULTANT shall test each electronics package prior to off-season storage. Any units needing factory service or parts will be repaired as soon as possible to insure readiness for the following flood season.

d. CONSULTANT shall provide equipment storage area for all electronics packages, batteries, tipping buckets and other equipment in a manner acceptable to DISTRICT. All batteries shall be maintained in properly charged condition according to manufacturer's specifications. All equipment shall be available for inspection or access within seventy-two (72) hours of notification by DISTRICT. CONSULTANT shall provide adequate casualty insurance coverage for all DISTRICT-owned equipment being stored.

5. New Installations and Radio Licensing

All new gaging stations, repeater stations, and base stations will be installed in accordance with Paragraphs 5.a. through 5.l, as appropriate. Specific installation requirements for new sites will be determined by DISTRICT during final design. DISTRICT shall provide all major components to be installed and CONSULTANT shall provide all other parts and materials necessary to complete construction. Installation fees will be negotiated with CONSULTANT prior to construction and CONSULTANT's compensation shall be in accordance with Paragraph 9 of this Agreement.

- a. CONSULTANT shall inspect all equipment pertinent to ALERT station operation.
 CONSULTANT shall prepare a punch list of any deficiencies observed and recommend additional equipment and services not included in this Scope of Services.
- b. CONSULTANT shall perform all preliminary equipment preparation necessary to assure complete installation and operation of the remote gage, repeater or base station.
- c. CONSULTANT shall test all electronics packages and perform minor adjustments as needed in accordance with manufacturer's RF specifications and FCC requirements.
- d. CONSULTANT shall provide DISTRICT with a list of serial numbers for all new equipment received.
- e. An initial field inspection shall be conducted by PARTIES of each site. Preliminary site design and layout recommendations shall be provided to DISTRICT by CONSULTANT. DISTRICT shall approve of final design prior to installation.
- f. CONSULTANT shall install all hardware necessary for station operation. This work will include: installing standpipe tower assembly; securing all hardware; installing electronics package, antenna, battery and solar panel; leveling tipping bucket; painting standpipe and other parts subject to corrosion; securing appurtenant supports; securing pressure transducer, PT housing, cables, connectors and conduit in a manner to protect against vandalism; general cleaning of site; and any other items deemed necessary to meet the terms of existing license agreements, easements or existing field conditions. Specific activities performed will be site dependent.
- g. Transmitter configurations will be set per specifications approved by DISTRICT. Test transmissions will be performed to verify that data transmitters are operating according to factory specifications and the repeaters are receiving and re-transmitting the signal. Watt meter readings will be taken and recorded. Minor RF and calibration adjustments will be made as needed.

- h. A final field inspection will be conducted by PARTIES. A punch list will be prepared and CONSULTANT shall correct any deficiencies noted.
- CONSULTANT shall prepare all correspondence and technical materials necessary for obtaining required FCC radio station licenses. This work will include all coordination activities required by the Federal Interagency Hydrologic Radio Frequency Coordination Group.
- j. New base stations will be installed and tested to verify that all components perform properly including the antenna, receiver, data decoder, connecting cables, uninterruptible power supply and computer. DISTRICT shall be responsible for the computer hardware, ALERT software maintenance, database management and database calibrations for all QNX base stations.
- k. CONSULTANT shall provide DISTRICT with a final installation report documenting pertinent site data, sensor IDs, serial numbers, model numbers, cable lengths, access requirements, and other pertinent information. Photographs of new stations and sensor locations will be included.
- CONSULTANT shall bear the risk of any and all loss or damage of equipment or property, which are the subject matter of this Agreement, during the course of construction of the facilities. Upon acceptance of the installation by DISTRICT, CONSULTANT shall automatically be relieved of such risk.

6. Spare Transmitters, Spare Sensors and Maintenance Equipment

- a. CONSULTANT shall be responsible for the maintenance, storage and use of all DISTRICT-owned electronics packages, radio transmitters and receivers, sensors, battery chargers, battery dischargers, remote station testers, spare parts and all other system maintenance equipment provided by DISTRICT.
- b. Appropriate care shall be taken in the use of all DISTRICT-owned equipment and such use shall be limited to ALERT system maintenance activities conducted in accordance with this Agreement.
- c. All DISTRICT-owned equipment shall be available for inspection by DISTRICT in accordance with Paragraph B.4.d of this Scope of Services.
- d. DISTRICT shall provide CONSULTANT with a current inventory of all spare parts and maintenance equipment. CONSULTANT shall maintain a separate inventory of equipment and assist DISTRICT with reconciling differences. CONSULTANT shall notify DISTRICT when spare equipment is placed in-service and when inventoried equipment is discarded or otherwise determined to be inoperable.
- e. CONSULTANT shall have no responsibility to provide casualty insurance coverage for DISTRICT-owned equipment located at gaging station sites. However, CONSULTANT shall bear the risk of any and all loss or damage of equipment or property, which are the subject matter of this Agreement, during the course of transporting equipment and maintaining facilities.

7. Repair and Replacement of Equipment

- a. CONSULTANT shall repair or replace failed equipment such as site antennas, cables, connectors, pressure transducers, signal conditioning boards, tipping buckets, housings, mountings, batteries and other items valued at less than \$100.
- b. CONSULTANT shall provide minor repairs including cleaning; adjustments; calibration; tuning; and replacement of miscellaneous hardware parts on equipment such as transmitters, repeaters, pressure transducers and sensors as part of the regular preventive maintenance services.
- c. CONSULTANT shall analyze failed equipment and make recommendations to DISTRICT concerning replacement or repair of major components, supplier options, and estimated costs. DISTRICT is responsible for the costs of repair or replacement of such equipment. On approval by DISTRICT, CONSULTANT shall oversee repairs, including the return of equipment to factory and testing of equipment after repair. CONSULTANT may, at CONSULTANT's discretion, provide DISTRICT with quotations for the repair of equipment by CONSULTANT as one option.

8. Field Verification of Water Levels

Upon request by DISTRICT, CONSULTANT shall, as promptly as possible and within 72 hours, inspect designated sites to establish current and recent past high water levels with respect to established local bench marks. CONSULTANT shall prepare and submit reports which correlate field measurements with ALERT data, assess sensor accuracy, and make recommendations concerning corrective measures. Field verification fees will be negotiated with CONSULTANT when appropriate and CONSULTANT's compensation shall be adjusted in accordance with Paragraph 9 of this Agreement.

On-site consulting, engineering and training	\$
In-office engineering, system design, and configuration	\$
Field Technical Services: installations, surveys, testing and troubleshooting	\$
Equipment Repair: electronic and mechanical	\$
Field Technician/Assistant	\$
Mileage - 4WD service vehicle	\$/mile
Materials (when not otherwise quoted)	Cost

The hourly rates for DIAD professional services for 2002 are as follows:

These are the rates charged for work performed on a time and material basis. They are also the rates used in providing fixed-cost estimates for contract amendments.