



**CONTRACT BETWEEN THE CITY OF AUSTIN ("City")  
and  
The University of Texas at Tyler dba UT Tyler ("Contractor")  
for  
University of Texas Tyler Salamander Gas Bubble Trauma Research**

**Contract Number: MA 6300 NA230000111**

The City accepts the Contractor's Offer for the above requirement and enters into the following Contract. This Contract is between The University of Texas at Tyler having offices at Tyler, TX and the City, a home-rule municipality incorporated by the State of Texas. Capitalized terms used but not defined herein have the meanings given in the Solicitation.

**1.1 This Contract is composed of the following documents in order of precedence:**

- 1.1.1 This Document
- 1.1.2 Terms and Conditions dated February 28, 2023.
- 1.1.3 Contractor's Offer, incorporated herein and attached as Exhibit A hereto.

**1.2 Compensation.**

MA: The Contractor shall be paid a total Not-to-Exceed amount of \$31,654 for the initial Contract term and \$10,661 for each extension option.

Unless otherwise specified, prices are firm and fixed for the first twelve (12) months. Thereafter, pricing is are subject to the Economic Price Adjustment provisions of this Contract.

**1.3 Term of Contract.**

MA: This Contract shall remain in effect for an initial term of 12 months or the City terminates the Contract. This Contract may be extended automatically beyond the initial term for up to 1 additional 12 month period at the City's sole option.

**1.4 Designation of Key Personnel.** The City and the Contractor resolve to keep the same key personnel assigned to this engagement throughout its term. In the event that it becomes necessary for the Contractor to replace any key personnel, the replacement will be an individual having equivalent experience and competence in executing projects such as the one described herein. Additionally, the Contractor shall promptly notify the City and obtain approval for the replacement. Such approval shall not be unreasonably withheld. The Contractor's and City's key personnel are identified as follows:

	<u>Name</u>	<u>Phone Number</u>	<u>Email Address</u>
Contractor Contract Manager	<u>Dr. Ryan Shartau</u>		<a href="mailto:rshartau@uttyler.edu">rshartau@uttyler.edu</a>
City Contract Manager	<u>Irene Sanchez</u>	<u>512-974-2821</u>	<a href="mailto:Irene.sanchez@austintexas.gov">Irene.sanchez@austintexas.gov</a>
City Project Manager	<u>Nathan Bendik</u>	<u>512-974-2040</u>	<a href="mailto:Nathan.bendik@austintexas.gov">Nathan.bendik@austintexas.gov</a>
City Contract Administrator, Procurement Specialist	<u>Al Drayton</u>	<u>512-974-2298</u>	<a href="mailto:alfonso.drayton@austintexas.gov">alfonso.drayton@austintexas.gov</a>

- 1.5 **Invoices.** The City's preference is to have invoices emailed to [WPDInvoices@austintexas.gov](mailto:WPDInvoices@austintexas.gov) or mailed to the below address:

	City of Austin
Department	Watershed Protection
Attn:	<a href="mailto:WPDInvoices@austintexas.gov">WPDInvoices@austintexas.gov</a>
Address	PO Box 1088
City, State, Zip Code	Austin, Texas 78767

For questions regarding your invoice/payment please contact the City Contract Manager.

This Contract (including any Exhibits and referenced Documents) constitutes the entire agreement of the parties regarding the subject matter of this Contract and supersedes all prior agreements and understandings, whether written or oral, relating to such subject matter. This Contract may be altered, amended, or modified only by a written instrument signed by the duly authorized representatives of both parties.

By signing below, Contractor hereby certifies the following are true and will ensure the following will remain true throughout the term of this Contract:

1. That its firm and its principals are not currently suspended or debarred from bidding on any Federal, State, or City of Austin Contracts.
2. That it has not in any way directly or indirectly:
  - a. Colluded, conspired, or agreed with any other person, firm, or corporation, as to the amount of this contract or the terms or conditions of this contract.
  - b. paid or agreed to pay any other person, firm, or corporation any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the prices in the contract.
3. That it has not received any compensation or a promise of compensation for participating in the preparation or development of the underlying Contract documents.
4. In accordance with Chapter 176 of the Texas Local Government Code, that the Offeror:
  - a. does not have an employment or other business relationship with any local government officer of the City or a family member of that officer that results in the officer or family member receiving taxable income;
  - b. has not given a local government officer of the City one or more gifts, other than gifts of food, lodging, transportation, or entertainment accepted as a guest, that have an aggregate value of more than \$100

in the twelve month period preceding the date the officer becomes aware of the execution of the Contract or that City is considering doing business with the Offeror; and

c. does not have a family relationship with a local government officer of the City in the third degree of consanguinity or the second degree of affinity.

5. Pursuant to City Council Resolution No. 20191114-056, that its firm and its principals are not currently and will not during the term of the Contract engage in practicing LGBTQ+ conversion therapy; referring persons to a healthcare provider or other person or organization for LGBTQ+ conversion therapy; or Contracting with another entity to conduct LGBTQ+ conversion therapy. If the City determines in its sole discretion that Contractor has during the term of this Contract engaged in any such practices, the City may terminate this Contract without penalty to the City.
6. Pursuant to Texas Government Code §2271.002, the Contractor verifies that it does not boycott Israel and will not boycott Israel during the term of this contract.
7. Pursuant to Texas Government Code Chapter 2274, the Contractor verifies that if it will have remote or direct access to communication infrastructure systems, cybersecurity systems, the electric grid, hazardous waste treatment systems, or water treatment facilities as a result of this contract, that it is not owned by or the majority of stock or other ownership interest of the Contractor is not held or controlled by:
  - a. individuals who are citizens of China, Iran, North Korea, Russia, or a Governor-designated country; or
  - b. a company or other entity, including a governmental entity, that is owned or controlled by citizens of or is directly controlled by the government of China, Iran, North Korea, Russia, or a Governor-designated country; or
  - c. headquartered in China, Iran, North Korea, Russia, or a Governor-designated country.
8. Pursuant to Texas Government Code Chapter 2274, the Contractor verifies that if it has 10 or more full-time employees, unless the contract contains a written verification from the company that it: (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association.
9. Pursuant to Texas Government Code Chapter 2274, the Contractor certifies that, if they have 10 or more full-time employees: (1) they do not boycott energy companies; and (2) will not boycott energy companies during the term of the contract.

In witness whereof, the parties have caused a duly authorized representative to execute this Contract on the date set forth below.

THE UNIVERSITY OF TEXAS AT TYLER

Dr. Kouider Mokhtari

Printed Name of Authorized Person

DocuSigned by:  
*Kouider Mokhtari*  
EF58D187AF5442...

Signature

Associate VP for Research

Title:

3/20/2023

Date:

CITY OF AUSTIN

Al Drayton

Printed Name of Authorized Person

*Al Drayton*  
Digitally signed by Al Drayton  
Date: 2023.03.21 10:39:49  
-05'00'

Signature

Title:

Date:

**CITY OF AUSTIN  
STANDARD TERMS AND CONDITIONS**

The Contractor agrees that the Contract shall be governed by the following terms and conditions.

**1 GENERAL**

**1.1 TERM OF CONTRACT:**

- A. The Contract shall commence upon execution unless otherwise specified and shall continue in effect until all obligations are performed in accordance with the Contract. Upon written notice to the Contractor from the City's Purchasing Officer or designee, unless specified otherwise in the Scope of Work, the Contract may be extended beyond the initial term at the City's sole option unless the Contractor is notified 30 days prior to the expiration. If the City exercises any extension option, all terms, conditions, and provisions of the Contract shall remain in effect for that extension period, subject only to any economic price adjustment otherwise allowed under the Contract.
- B. Upon expiration of the initial term or any period of extension, the Contractor agrees to holdover under the terms and conditions of this Contract for such a period as is reasonably necessary for the City to re-solicit and/or complete the Deliverables due under this Contract. Any holdover period will not exceed 180 calendar days unless mutually agreed on by both parties in writing.

**1.2 INDEFINITE QUANTITY:**

The quantities and/or services listed herein are estimates of the goods and services needed by the City for the period of the Contract. The City reserves the right to purchase more or less of these quantities and/or services as may be required during the Contract term. Quantities and/or services will be as needed and specified by the City for each order. Unless specified in the Contract, there are no minimum order quantities.

**1.3 INVOICES:**

- A. The Contractor shall submit separate Invoices for each Order after each delivery or on the schedule provided in the Contract. If partial shipments or deliveries are authorized by the City, a separate Invoice must be sent for each shipment or delivery made.
- B. Invoices shall be sent to the address on the Purchase Order or Delivery Order in the section entitled, "BILL TO". Proper Invoices must include a unique Invoice number, the purchase Order or delivery Order number, the master agreement number (if applicable), the Department's Name, and the name of the point of contact for the Department. Invoices shall be itemized according to pricing structure in the Contract. A copy of the bill of lading and the freight waybill, when applicable, shall be attached to the Invoice. The Contractor's name and, if applicable, the tax identification number on the Invoice must exactly match the information in the Vendor's registration with the City. Unless otherwise instructed in writing, the City may rely on the remittance address specified on the Contractor's Invoice. Invoices received without all required information cannot be processed and will be returned to the vendor.
- C. Invoices for labor shall include a tabulation of work-hours at the appropriate rates and grouped by work Order number. Time billed for labor shall be limited to hours actually worked.
- D. **Unless otherwise expressly authorized in the Contract, the Contractor shall pass through all Subcontracting and other authorized expenses at actual cost without markup.**
- E. Federal excise taxes, State taxes, or City sales taxes must not be included in the Invoiced amount. The City will furnish a tax exemption certificate upon request.

**1.4 PAYMENT:**

- A. All proper Invoices received by the City will be paid within 30 calendar days of the City's receipt of the Deliverables or of the Invoice, whichever is later.

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- B. If payment is not timely made, (per Paragraph A), interest shall accrue on the unpaid balance at the lesser of the rate specified in Texas Government Code §2251.025 or the maximum lawful rate; except, if payment is not timely made for a reason for which the City may withhold payment hereunder, interest shall not accrue until 10 calendar days after the grounds for withholding payment have been resolved.
- C. If partial shipments or deliveries are authorized by the City, the Contractor will be paid for the partial shipment or delivery, as stated above, provided that the Invoice matches the shipment or delivery.
- D. The City may withhold or set off the entire payment or part of any payment otherwise due the Contractor to such extent as may be necessary on account of:
  - i. Delivery of defective or non-conforming Deliverables by the Contractor;
  - ii. Third party claims, which are not covered by the insurance which the Contractor is required to provide under the terms of this Contract, are filed or there is reasonable evidence indicating probable filing of such claims;
  - iii. Failure of the Contractor to pay Subcontractors, or for labor, materials or equipment;
  - iv. Damage to the property of the City or the City's agents, employees or Contractors, which is not covered by insurance required to be provided by the Contractor;
  - v. Reasonable evidence demonstrates that the Contractor's obligations will not be completed within the time specified in the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
  - vi. Failure of the Contractor to submit proper Invoices with all required attachments and supporting documentation; or
  - vii. Failure of the Contractor to comply with any material provision of the Contract Documents.
- E. Notice is hereby given of Article VIII, §1 of the Austin City Charter which prohibits the payment of any money to any person, firm or corporation who is in arrears to the City for taxes, and of §2-8-3 of the Austin City Code concerning the right of the City to offset indebtedness owed the City.
- F. The Contractor agrees to accept payment by either credit card, check or Electronic Funds Transfer for all goods and/or services provided under the Contract. The Contractor shall factor the cost of processing credit card payments into the Offer. There shall be no additional charges, surcharges, or penalties to the City for payments made by credit card.
- G. The awarding or continuation of this Contract is dependent upon the availability of funding. The City's payment obligations are payable only and solely from funds appropriated and available for this Contract. The absence of appropriated or other lawfully available funds shall render the Contract null and void to the extent funds are not appropriated or available and any Deliverables delivered but unpaid shall be returned to the Contractor. The City shall provide the Contractor written notice of the failure of the City to make an adequate appropriation for any fiscal year to pay the amounts due under the Contract, or the reduction of any appropriation to an amount insufficient to permit the City to pay its obligations under the Contract. In the event of inadequate appropriation of funds, there will be no penalty nor removal fees charged to the City. The City shall pay the Contractor, to the extent of funds appropriated or otherwise legally available for such purposes, for all goods delivered and services performed, and obligations incurred prior to the date of notice of non-appropriation.

**1.5 FINAL PAYMENT AND CLOSE OUT:**

- A. If a Minority-Owned Business Enterprise/Women-Owned Business Enterprise (MBE/WBE) Program Compliance Plan is required by the Solicitation, and the Contractor has identified Subcontractors, the Contractor is required to submit a Contract Close-Out MBE/WBE Compliance Report to the Project Manager or Contract Manager no later than the 15th calendar day after completion of all work under the Contract. Final payment, retainage, or both may be withheld if the Contractor is not in compliance with the requirements of the Compliance Plan as accepted by the City.
- B. The making and acceptance of final payment will constitute:

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- i. A waiver of all claims by the City against the Contractor, except claims (1) which have been previously asserted in writing and not yet settled, (2) arising from defective work appearing after final inspection, (3) arising from failure of the Contractor to comply with the Contract or the terms of any warranty specified herein, (4) arising from the Contractor's continuing obligations under the Contract, including but not limited to indemnity and warranty obligations, or (5) arising under the City's right to audit; and
- ii. A waiver of all claims by the Contractor against the City other than those previously asserted in writing and not yet settled.

**1.6 SPECIAL TOOLS & TEST EQUIPMENT:**

If the price stated on the Offer includes the cost of any special tooling or special test equipment fabricated or required by the Contractor for the purpose of filling this Order, such special tooling equipment and any process sheets related thereto shall become the property of the City and shall be identified by the Contractor as such.

**1.7 AUDITS AND RECORDS:**

- A. The Contractor agrees that the representatives of the Office of the City Auditor or other authorized representatives of the City shall have access to, and the right to audit, examine, or reproduce, any and all records of the Contractor related to the performance, including security audits, under this Contract, at the City's expense. The Contractor agrees to refund to the City any overpayments disclosed by any such audit. The City agrees to protect from disclosure Contractor's confidential and proprietary information disclosed during an audit to the same extent it protects its own confidential and proprietary information, subject to the requirements of the Texas Public Information Act, Chapter 2251, Texas Government Code.
- B. Records Retention:
  - i. Contractor is subject to City Code Chapter 2-11 (Records Management), and as it may subsequently be amended.
  - ii. The Contractor shall retain all records for a period of three years after final payment on this Contract or until all audit and litigation matters that the City has brought to the attention of the Contractor are resolved, whichever is longer.

**1.8 FINANCIAL DISCLOSURES AND ASSURANCE:**

The City may request and review financial information as the City requires to determine the credit worthiness of the Contractor, including but not limited to, annual reports, audited financial Statements and reports, bank letters of credit or other credit instruments. Failure of the Contractor to comply with this requirement shall be grounds for terminating the Contract.

**1.9 RIGHT TO ASSURANCE:**

Whenever one party to the Contract in good faith has reason to question the other party's intent to perform, demand may be made to the other party for written assurance of the intent to perform. If no assurance is given within the time specified after demand is made, the demanding party may treat this failure as an anticipatory repudiation of the Contract.

**1.10 STOP WORK NOTICE:**

The City may issue an immediate Stop Work Notice in the event the Contractor is observed performing in a manner that is in violation of Federal, State, or local guidelines, or in a manner that is determined by the City to be unsafe to either life or property. Upon notification, the Contractor will cease all work until notified

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by the City that the violation or unsafe condition has been corrected. The Contractor shall be liable for all costs incurred by the City as a result of the issuance of such Stop Work Notice.

**1.11 DEFAULT:**

The Contractor shall be in default under the Contract if the Contractor (a) fails to fully, timely and faithfully perform any of its material obligations under the Contract, (b) fails to provide adequate assurance of performance, (c) becomes insolvent or seeks relief under the bankruptcy laws of the United States or (d) makes a material misrepresentation in Contractor's Offer, or in any report or Deliverable required to be submitted by the Contractor to the City. The City shall be in default if it fails to make payment in accordance with the Payment terms of this Contract.

**1.12 TERMINATION FOR CAUSE:**

In the event of a default by either party, the non-defaulting party shall have the right to terminate the Contract for cause, by written notice effective ten 10 calendar days, unless otherwise specified, after the date of such notice, unless the defaulting party, within such 10 day period, cures such default, or provides evidence sufficient to prove to the non-defaulting party's reasonable satisfaction that such default does not, in fact, exist. Additionally, the City shall have the right to act in accordance with the terms defined by "City of Austin Purchasing Office Probation, Suspension and Debarment Rules for Vendors." In addition to any other remedy available under law or in equity, either party shall be entitled to recover all actual damages, costs, losses and expenses, incurred by the party as a result of the Contractor's default, including, without limitation, cost of cover, court costs, and prejudgment and post-judgment interest at the maximum lawful rate. All rights and remedies under the Contract are cumulative and not exclusive of any other right or remedy provided by law. In the event of termination of the Contract under this Section, the Contractor shall handover all complete and partially complete Work Products and Documentation developed under this Contract.

**1.13 ATTORNEY'S FEES:**

In consideration of the award and execution of this Contract and in consideration of the City's waiver of its right to attorney's fees, the Contractor knowingly and intentionally waives its right to attorney's fees under §271.153, Texas Local Government Code, in any administrative proceeding, alternative dispute resolution proceeding, or litigation arising out of or connected to this Contract.

**1.14 TERMINATION WITHOUT CAUSE:**

The City shall have the right to terminate the Contract, in whole or in part, without cause any time upon 30 calendar days' prior written notice. Upon receipt of a notice of termination, the Contractor shall promptly cease all further work pursuant to the Contract, with such exceptions, if any, specified in the notice of termination. The City shall pay the Contractor, to the extent of funds appropriated or otherwise legally available for such purposes, for all goods delivered and services performed, and obligations incurred prior to the date of termination in accordance with the terms hereof. In the event of termination of the Contract under this Section, the Contractor shall handover all complete and partially complete Work Products and Documentation developed under this Contract.

**1.15 FRAUD:**

Fraudulent Statements by the Contractor on any Offer or in any report or Deliverable required to be submitted by the Contractor to the City shall be grounds for the termination of the Contract for cause by the City and may result in legal action.

**1.16 DELAYS:**



## CITY OF AUSTIN STANDARD TERMS AND CONDITIONS

The City may delay scheduled delivery or other due dates by written notice to the Contractor if the City deems it is in its best interest. If such delay causes an increase in the cost of the work under the Contract, the City and the Contractor shall negotiate an equitable adjustment for costs incurred by the Contractor in the Contract price and execute an amendment to the Contract. The Contractor must assert its right to an adjustment within 30 calendar days from the date of receipt of the notice of delay. Failure to agree on any adjusted price shall be handled under the Dispute Resolution Clause. However, nothing in this provision shall excuse the Contractor from delaying the delivery as notified.



### 1.17 FORCE MAJEURE:

Contractor may be excused from performance under the Contract for any period when performance is prevented as the result of an act of God, strike, war, civil disturbance, epidemic, pandemic, sovereign conduct, or court order provided that the Contractor experiences the event of force majeure and prudently and promptly acts to take any and all steps that are within the Contractor's control to ensure performance and to shorten the duration of the event of force majeure. Contractor shall provide notice of the force majeure event to the City within three (3) business days of the event or delay, whichever occurs later, to establish a mutually agreeable period of time reasonably necessary to overcome the effect of such failure to perform. Subject to this provision, such non-performance shall not be deemed a default or a ground for termination. However, the City may terminate an order under the Contract if it is determined by the City that the Contractor will not be able to deliver goods or services in a timely manner to meet the business needs of the City.

### 1.18 INDEMNITY:

A. IN THIS SECTION, THE FOLLOWING TERMS HAVE THE MEANINGS ASSIGNED BELOW:

- (1) "INDEMNIFIED PARTY" IS THE CITY AND THE CITY'S OFFICERS, ELECTED AND APPOINTED OFFICIALS, EMPLOYEES, AGENTS, REPRESENTATIVES, SUCCESSORS AND ASSIGNS.
- (2) "INDEMNIFYING PARTY" IS THE CONTRACTOR, ITS OFFICERS, AGENTS, EMPLOYEES, SUBCONTRACTORS, SUCCESSORS AND ASSIGNS.

- To the extent allowed by the laws and Constitution of the State of Texas, 
- (3) THE INDEMNIFYING PARTY SHALL INDEMNIFY, HOLD HARMLESS, AND DEFEND THE INDEMNIFIED PARTY AGAINST ANY AND ALL LOSSES, DAMAGES, LIABILITIES, DEFICIENCIES, CLAIMS, CAUSES OF ACTION, JUDGMENTS, SETTLEMENTS, INTEREST, AWARDS, PENALTIES, FINES, COSTS OR EXPENSES, INCLUDING PROFESSIONAL FEES AND ATTORNEYS' FEES, THAT ARE INCURRED BY THE INDEMNIFIED PARTY ARISING OUT OF ANY DIRECT OR THIRD PARTY CLAIM OF: 
    - i. BREACH OR NON-FULFILLMENT OF ANY PROVISION OF THIS CONTRACT BY THE INDEMNIFYING PARTY;
    - ii. ANY FALSE REPRESENTATION OR WARRANTY MADE BY THE INDEMNIFYING PARTY IN THIS CONTRACT OR IN THE INDEMNIFYING PARTY'S PROPOSAL/RESPONSE LEADING TO THIS CONTRACT;
    - iii. ANY NEGLIGENT OR MORE CULPABLE ACT OR OMISSION OF THE INDEMNIFYING PARTY, INCLUDING ANY RECKLESS OR WILLFUL MISCONDUCT, RELATED TO THE PERFORMANCE OF ITS OBLIGATIONS UNDER THIS CONTRACT;
    - iv. BODILY INJURY; DEATH OF ANY PERSON; OCCUPATIONAL ILLNESS OR DISEASE; LOSS OF SERVICES, WAGES, OR INCOME; OR DAMAGE TO REAL OR PERSONAL PROPERTY CAUSED BY THE NEGLIGENT OR MORE CULPABLE ACTS OR OMISSIONS OF INDEMNIFYING PARTY, INCLUDING ANY RECKLESS OR WILLFUL MISCONDUCT; OR
    - v. ANY FAILURE OF THE INDEMNIFYING PARTY TO COMPLY WITH ANY APPLICABLE FEDERAL, STATE, OR LOCAL LAWS, REGULATIONS, OR CODES RELATED TO THE PERFORMANCE OF ITS OBLIGATIONS UNDER THIS CONTRACT.

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- B. THE INDEMNIFIED PARTY SHALL GIVE THE INDEMNIFYING PARTY WRITTEN NOTICE (A "CLAIM NOTICE") OF ANY CLAIM RECEIVED RELATED TO THIS CONTRACT. THE INDEMNIFYING PARTY'S DUTY TO DEFEND APPLIES IMMEDIATELY. THE INDEMNIFIED PARTY'S FAILURE TO PROVIDE A CLAIM NOTICE TO THE INDEMNIFYING PARTY DOES NOT RELIEVE THE INDEMNIFYING PARTY OF ITS DUTY TO INDEMNIFY, HOLD HARMLESS AND DEFEND THE INDEMNIFIED PARTY.
- C. THE INDEMNIFIED PARTY MAY SELECT ITS OWN LEGAL COUNSEL TO REPRESENT ITS INTERESTS. THE INDEMNIFYING PARTY SHALL:
  - i. REIMBURSE THE INDEMNIFIED PARTY FOR ITS REASONABLE COSTS ~~AND ATTORNEY'S FEES~~ IMMEDIATELY UPON REQUEST, AS THEY ARE INCURRED, AND
  - ii. REMAIN RESPONSIBLE TO THE INDEMNIFIED PARTY FOR ANY LOSSES INDEMNIFIED UNDER THIS SECTION.
- D. THE INDEMNIFYING PARTY SHALL GIVE PROMPT, WRITTEN NOTICE TO THE INDEMNIFIED PARTY OF ANY PROPOSED SETTLEMENT OF A CLAIM THAT IS INDEMNIFIABLE UNDER THIS SECTION. THE INDEMNIFYING PARTY MAY NOT, WITHOUT THE INDEMNIFIED PARTY'S PRIOR, WRITTEN CONSENT, SETTLE OR COMPROMISE ANY CLAIM OR CONSENT TO THE ENTRY OF ANY JUDGMENT REGARDING WHICH INDEMNIFICATION IS BEING SOUGHT UNDER THIS SECTION.
- E. MAINTENANCE OF THE INSURANCE REQUIRED BY THIS CONTRACT SHALL NOT LIMIT THE INDEMNIFYING PARTY'S OBLIGATIONS UNDER THIS SECTION. THE INDEMNIFYING PARTY SHALL REQUIRE ALL SUBCONTRACTORS TO INDEMNIFY THE CITY IN THE SAME MANNER AS PROVIDED IN THIS SECTION.

**1.19 NOTICES:**

Unless otherwise specified, all notices, requests, or other communications required or appropriate to be given under the Contract shall be in writing and shall be deemed delivered three business days after postmarked if sent by U.S. Postal Service Certified or Registered Mail, Return Receipt Requested. Notices delivered by other means shall be deemed delivered upon receipt by the addressee. Notices to the Contractor shall be sent to the address registered with the City. Notices to the City shall be addressed to the City at P.O. Box 1088, Austin, Texas 78767 and marked to the attention of the assigned Procurement Specialist.

**1.20 CONFIDENTIALITY:**

The Parties may be granted access to certain of the other Party's or Licensor's Confidential Information (including inventions, employee information, trade secrets, confidential know-how, confidential business information, and other information which the Party or its licensors consider confidential) (Confidential Information) to provide the Deliverables to the City. The Parties acknowledge and agree that the Confidential Information is the valuable property of the disclosing Party and its licensors and any unauthorized use, disclosure, dissemination, or other release of the Confidential Information will substantially injure the disclosing Party and its licensors. The receiving Party (including its employees, Subcontractors, agents, or representatives) agrees it will maintain the Confidential Information in strict confidence and shall not disclose, disseminate, copy, divulge, recreate, or otherwise use the Confidential Information without prior written consent of disclosing Party, or in a manner not expressly permitted under this Contract, unless the Confidential Information is required to be disclosed by law or an Order of a court or other governmental authority (including a Texas Attorney General opinion) with proper jurisdiction. In all cases, the receiving Party agrees to promptly notify the disclosing Party before disclosing Confidential Information to permit the disclosing Party reasonable time to seek an appropriate protective Order. The receiving Party agrees to use protective measures no less stringent than the receiving Party uses in its business to protect its own most valuable information. In all circumstances, the receiving Party's protective

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measures must be at least reasonable measures to ensure the continued confidentiality of the Confidential Information.

- A. The Parties agree: (i) not to use Confidential Information for any reason other than for the purpose of providing or receiving the Deliverables, (ii) not to disclose Confidential Information to any third party other than to its employees who have a need to know the Confidential Information for furtherance of providing the Deliverables, and (iii) to promptly notify the disclosing Party of any request for Confidential Information to be disclosed under any law or order of any court or other governmental authority with proper jurisdiction, so as to permit disclosing Party reasonable time to seek an appropriate protective order.
- B. All Confidential Information and derivations thereof shall remain the sole and exclusive property of disclosing Party, and no license or other right to the Confidential Information or intellectual property is granted or implied hereby. Upon the written request of disclosing Party, the receiving Party shall promptly return to disclosing Party all tangible items of Confidential Information furnished by disclosing Party and all copies thereof or certify in writing that all Confidential Information, including all copies, has been destroyed.
- C. No expiration or termination of the Contract shall affect either Party's rights or obligations with respect to Confidential Information.
- D. The Parties acknowledge and agree that any breach or threatened breach of the Contract could cause harm for which money damages may not provide an adequate remedy.
- E. The parties agree that in the event of such a breach or threatened breach of the Contract, in addition to any other available remedies, City may seek temporary and permanent injunctive relief restraining the Contractor from disclosing or using, in whole or in part, any Confidential Information.

**1.21 TEXAS PUBLIC INFORMATION ACT:**

- A. All material submitted by the Contractor to the City related to the Contract may become subject to public disclosure upon receipt by the City. Any portions of such material claimed by the Contractor to be proprietary must be clearly marked as such. Determination of the public nature of the material is subject to the Texas Public Information Act, Chapter 552, Texas Government Code.
- B. In accordance with Texas Government Code §552.372, if this Contract has a stated expenditure of at least \$1 million in public funds for the purchase of goods or services by the City or results in the expenditure of at least \$1 million in public funds for the purchase of goods or services by the City in a fiscal year, Contractor agrees to:
  - i. Preserve all Contracting information related to the Contract as provided by the records retention requirements in the AUDITS AND RECORDS Section of the Contract;
  - ii. Promptly provide to the City any Contracting information related to the Contract that is in the custody or possession of Contractor on request of the City; and
  - iii. On completion of the Contract, either:
    - (1) Provide at no cost to the City all Contracting information related to the Contract that is in the custody or possession of Contractor; or
    - (2) Preserve the Contracting information related to the Contract as provided by the records retention requirements in the AUDITS AND RECORDS Section of the Contract.
- C. The requirements of Subchapter J, Chapter 552, Texas Government Code, may apply to this Contract, and the Contractor agrees that the Contract can be terminated if the Contractor knowingly or intentionally fails to comply with a requirement of that Subchapter.

**1.22 PUBLICATIONS:**

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All published material and written reports submitted under the Contract must be originally developed material unless otherwise specifically provided in the Contract. When material not originally developed is included in a report in any form, the source shall be identified.

**1.23 ADVERTISING:**

The Contractor shall not advertise or publish, without the City's prior written consent, the fact that the City has entered into the Contract, except to the extent required by law.

**1.24 NO CONTINGENT FEES:**

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon any agreement or understanding for commission, percentage, brokerage, or contingent fee, excepting bona fide employees of bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the City shall have the right, in addition to any other remedy available, to cancel the Contract without liability and to deduct from any amounts owed to the Contractor, or otherwise recover, the full amount of such commission, percentage, brokerage or contingent fee.

**1.25 GRATUITIES:**

The City may, by written notice to the Contractor, cancel the Contract without liability if it is determined by the City that gratuities were Offered or given by the Contractor or any agent or representative of the Contractor to any officer or employee of the City of Austin with a view toward securing the Contract or securing favorable treatment with respect to the awarding or amending or the making of any determinations with respect to the performing of such Contract. In the event the Contract is canceled by the City pursuant to this provision, the City shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by the Contractor in providing such gratuities.

**1.26 PROHIBITION AGAINST PERSONAL INTEREST IN CONTRACTS:**

No officer, employee, independent consultant, or elected official of the City who is involved in the development, evaluation, or decision-making process of the performance of any Solicitation shall have a financial interest, direct or indirect, in the Contract resulting from that Solicitation. Any willful violation of this Section shall constitute impropriety in office, and any officer or employee guilty thereof shall be subject to disciplinary action up to and including dismissal. Any violation of this provision, with the knowledge, expressed or implied, of the Contractor shall render the Contract voidable by the City.

**1.27 INDEPENDENT CONTRACTOR:**

The Contract shall not be construed as creating an employer/employee relationship, a partnership, or a joint venture. The Contractor's services shall be those of an independent Contractor. The Contractor agrees and understands that the Contract does not grant any rights or privileges established for employees of the City.

**1.28 ASSIGNMENT DELEGATION:**

The Contract shall be binding upon and ensure to the benefit of the City and the Contractor and their respective successors and assigns, provided however, that no right or interest in the Contract shall be assigned and no obligation shall be delegated by the Contractor without the prior written consent of the City. Any attempted assignment or delegation by the Contractor shall be void unless made in conformity with this Paragraph. The Contract is not intended to confer rights or benefits on any person, firm or entity not a party hereto; it being the intention of the parties that there be no third-party beneficiaries to the Contract.

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**1.29 WAIVER:**

The claim or right arising out of a breach of the Contract cannot be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party. No waiver by either the Contractor or the City of any one or more events of default by the other party shall operate as, or be construed to be, a permanent waiver of any rights or obligations under the Contract, or an express or implied acceptance of any other existing or future default or defaults, whether of a similar or different character.

**1.30 MODIFICATIONS:**

The Contract can be modified or amended only in writing and signed by both parties. No pre-printed or similar terms on any Contractor Invoice, Order, clickwrap agreement or other document shall have any force or effect to change the terms, covenants, and conditions of the Contract.

**1.31 INTERPRETATION:**

The Contract is intended by the parties as a final, complete and exclusive Statement of the terms of their agreement. No course of prior dealing between the parties or course of performance or usage of the trade shall be relevant to supplement or explain any term used in the Contract. Although the Contract may have been substantially drafted by one party, it is the intent of the parties that all provisions be construed in a manner to be fair to both parties, reading no provisions more strictly against one party or the other. Whenever a term defined by the Uniform Commercial Code, as enacted by the State of Texas, is used in the Contract, the UCC definition shall control, unless otherwise defined in the Contract.

**1.32 DISPUTE RESOLUTION:**

- A. If a dispute arises out of or relates to the Contract, or the breach thereof, the parties agree to negotiate prior to prosecuting a suit for damages. However, this Section does not prohibit the filing of a lawsuit to toll the running of a statute of limitations or to seek injunctive relief. Either party may make a written request for a meeting between representatives of each party within 14 calendar days after receipt of the request or such later period as agreed by the parties. Each party shall include, at a minimum, one senior level individual with decision-making authority regarding the dispute. The purpose of this and any subsequent meeting is to attempt in good faith to negotiate a resolution of the dispute. If, within 30 calendar days after such meeting, the parties have not succeeded in negotiating a resolution of the dispute, they will proceed directly to mediation as described below. Negotiation may be waived by a written agreement signed by both parties, in which event the parties may proceed directly to mediation as described below.
- B. If the efforts to resolve the dispute through negotiation fail, or the parties waive the negotiation process, the parties may select, within 30 calendar days, a mediator trained in mediation skills to assist with resolution of the dispute. Should they choose this option, the City and the Contractor agree to act in good faith in the selection of the mediator and to consider qualified individuals nominated to act as mediator. Nothing in the Contract prevents the parties from relying on the skills of a person who is trained in the subject matter of the dispute or a Contract interpretation expert. If the parties fail to agree on a mediator within 30 calendar days of initiation of the mediation process, the mediator shall be selected by the Travis County Dispute Resolution Center. The parties agree to participate in mediation in good faith for up to 30 calendar days from the date of the first mediation session. The City and the Contractor will share the mediator's fees equally and the parties will bear their own costs of participation such as fees for any consultants or attorneys they may utilize to represent them or otherwise assist them in the mediation.

**1.33 JURISDICTION AND VENUE:**

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The Contract is made under and shall be governed by the laws of the State of Texas, including, when applicable, the Uniform Commercial Code as adopted in Texas, Bus. & Comm. Code, Chapter 1, excluding any rule or principle that would refer to and apply the substantive law of another State or jurisdiction. All issues arising from this Contract shall be resolved in the courts of Travis County, Texas and the parties agree to submit to the exclusive personal jurisdiction of such courts. The foregoing, however, shall not be construed or interpreted to limit or restrict the right or ability of the City to seek and secure injunctive relief from any competent authority as contemplated herein.

**1.34 INVALIDITY:**

The invalidity, illegality, or unenforceability of any provision of the Contract shall in no way affect the validity or enforceability of any other portion or provision of the Contract. Any void provision shall be deemed severed from the Contract and the balance of the Contract shall be construed and enforced as if the Contract did not contain the particular portion or provision held to be void. The parties further agree to reform the Contract to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this Section shall not prevent this entire Contract from being void should a provision which is the essence of the Contract be determined to be void.

**1.35 HOLIDAYS:**

Dates for the holidays observed by the City can be found here <https://www.austintexas.gov/departments/official-city-holidays>

If a Legal Holiday falls on Saturday, it will be observed on the preceding Friday. If a Legal Holiday falls on Sunday, it will be observed on the following Monday.

**1.36 SURVIVABILITY OF OBLIGATIONS:**

All provisions of the Contract that impose continuing obligations on the parties, including but not limited to the warranty, indemnity, and confidentiality obligations of the parties, shall survive the expiration or termination of the Contract.

**1.37 COOPERATIVE CONTRACT:**

- A. The City has entered into Interlocal Purchasing Agreements with other governmental entities, for the purpose of accessing their cooperative contracts and making available our cooperative contracts, pursuant to the Interlocal Cooperation Act, Chapter 791 of the Texas Government Code. The Contractor agrees to offer the same prices and terms and conditions of this cooperative contract to other eligible governmental agencies that have entered into an interlocal agreement with the City for the purpose of accessing the City's cooperative contracts.
- B. The City does not accept any responsibility or liability for the purchases by other governmental entities made under a separate contract based on this cooperative contract.

**1.38 EQUAL OPPORTUNITY:**

- A. **Equal Employment Opportunity:** No Contractor, or Contractor's agent, shall engage in any discriminatory employment practice as defined in Chapter 5-4 of the City Code. No Offer submitted to the City shall be considered, nor any Purchase Order issued, or any Contract awarded by the City unless the Offeror has executed and filed with the City Purchasing Office a current Non-Discrimination Certification. Non-compliance with Chapter 5-4 of the City Code may result in sanctions, including termination of the Contract and the Contractor's suspension or debarment from participation on future City Contracts until deemed compliant with Chapter 5-4.

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- B. **Non-Retaliation:** The Contractor agrees to prohibit retaliation, discharge or otherwise discrimination against any employee or applicant for employment who has inquired about, discussed or disclosed their compensation.
- C. **Americans with Disabilities Act (ADA) Compliance:** No Contractor, or Contractor's agent, shall engage in any discriminatory practice against individuals with disabilities as defined in the ADA, including but not limited to: employment, accessibility to goods and services, reasonable accommodations, and effective communications.

## 2 SERVICES

### 2.1 ACCEPTANCE OF INCOMPLETE OR NON-CONFORMING DELIVERABLES AND/OR SERVICES:

If, instead of requiring immediate correction or removal and replacement of defective or non-conforming Deliverables or Services, the City prefers to accept it, the City may do so. The Contractor shall pay all claims, costs, losses and damages attributable to the City's evaluation of and determination to accept such defective or non-conforming Deliverables or Services. If any such acceptance occurs prior to final payment, the City may deduct such amounts as are necessary to compensate the City for the diminished value of the defective or non-conforming Deliverables or Services. If the acceptance occurs after final payment, such amount will be refunded to the City by the Contractor within 30 calendar days of notification provided by the City.

### 2.2 WORKFORCE:

- A. The Contractor shall employ only orderly and competent workers, skilled in the performance of the services which they will perform under the Contract.
- B. The Contractor, its employees, Subcontractors, and Subcontractor's employees may not while engaged in participating or responding to a Solicitation or while in the course and scope of delivering goods or services under a City of Austin Contract or on the City's property:
  - i. Illegally use or possess a firearm, except as required by the terms of the Contract; or
  - ii. Use or possess alcoholic or other intoxicating beverages, illegal drugs or controlled substances, nor may such workers be intoxicated, or under the influence of alcohol or drugs, on the job.
- C. If the City or the City's representative notifies the Contractor that any worker is incompetent, disorderly or disobedient, has knowingly or repeatedly violated safety regulations, has illegally possessed any firearms, or has possessed or was under the influence of alcohol or drugs on the job, the Contractor shall immediately remove such worker from Contract services, and may not employ such worker again on Contract services without the City's prior written consent.

### 2.3 GUARANTEE – SERVICES:

The Contractor warrants and represents that all services to be provided to the City under the Contract will be fully and timely performed in a good and workmanlike manner in accordance with generally accepted industry standards and practices following the terms, conditions, and covenants of the Contract, and all applicable Federal, State and local laws, rules or regulations.

- A. The Contractor may not limit, exclude or disclaim the foregoing warranty or any warranty implied by law, and any attempt to do so shall be without force or effect.
- B. Unless otherwise specified in the Contract, the warranty period shall be at least one year from Final Acceptance Date. If during the warranty period, one or more of the above warranties are breached, the Contractor shall promptly upon receipt of demand perform the services again in accordance with

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the services warranty standard at no additional cost to the City. All costs incidental to such additional performance shall be borne by the Contractor. The City shall endeavor to give the Contractor written notice of the breach of warranty within 30 calendar days of discovery of the breach of warranty, but failure to give timely notice shall not impair the City's rights under this Section.

- C. If the Contractor is unable or unwilling to perform its services in accordance with the above standard as required by the City, then in addition to any other available remedy, the City may reduce the amount of services it may be required to purchase under the Contract from the Contractor and purchase conforming services from other sources. In such event, the Contractor shall pay to the City upon demand the increased cost, if any, incurred by the City to procure such services from another source.

### 2.4 DATA SECURITY:

The Contractor shall:

- A. Notify the City of a Security Incident as soon as practicable, but no later than 24 hours after the Contractor becomes aware of it; and
- B. Notify the City Identified Contact of any of a Security Incidents by telephone at 512-974-4357 and email at [cybersecurity@austintexas.gov](mailto:cybersecurity@austintexas.gov) and [AE-Exec-Info-Sec@austinenergy.com](mailto:AE-Exec-Info-Sec@austinenergy.com).
- B. All vendors and subcontractors who have access to city data are required to have internal privacy and security policies.
- C. All vendors and subcontractors are required to provide proof of at least annual cybersecurity training for all authorized persons with access to city data.

### 2.5 TRAVEL EXPENSES:

All travel, lodging and per diem expenses in connection with the Contract for which reimbursement may be claimed by the Contractor under the terms of the Solicitation will be reviewed against the current United States General Services Administration Domestic Per Diem rates as published and maintained online at: <https://www.gsa.gov/travel/plan-book/per-diem-rates>

No amounts in excess of the Travel Policy or rates shall be paid. All Invoices must be accompanied by copies of detailed itemized receipts (e.g. hotel bills, airline tickets). No reimbursement will be made for expenses not actually incurred. Airline fares in excess of coach or economy will not be reimbursed. Mileage charges may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations.

### 2.6 COMPLIANCE WITH HEALTH, SAFETY, AND ENVIRONMENTAL REGULATIONS:

The Contractor, its Subcontractors, and their respective employees, shall comply fully with all applicable Federal, State, and local health, safety, and environmental laws, ordinances, rules and regulations in the performance of the services, including but not limited to those promulgated by the City and by the Occupational Safety and Health Administration (OSHA). In case of conflict, the most stringent safety requirement shall govern. The Contractor shall indemnify and hold the City harmless from and against all claims, demands, suits, actions, judgments, fines, penalties and liability of every kind arising from the breach of the Contractor's obligations under this Paragraph.

### 2.7 WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID) REQUIRED BACKGROUND CHECK:

- A. Contractors are required to obtain a certified criminal background report with fingerprinting (referred to as the "report") for all persons performing on the Contract, including all Contractor, Subcontractor,



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- and Supplier personnel (for convenience referred to as “Contractor’s personnel”) and shall not utilize any Contractor’s personnel, to fulfill the obligations of the Contract, who have been convicted of any crime of dishonesty, including but not limited to criminal fraud, or otherwise convicted of any felony or misdemeanor offense for which incarceration for up to 1 year is an authorized penalty.
- B. The report may be obtained by reporting to one of the below governmental entities, submitting to fingerprinting and requesting the report [requestors may anticipate a two-week delay for State reports and up to a four- to six-week delay for receipt of a Federal report.
    - i. Texas Department of Public Safety for any person currently residing in the State of Texas and having a valid Texas driver’s license or photo ID card;
    - ii. The appropriate governmental agency from either the U.S. state or foreign nation in which the person resides and holds either a valid U.S. state-issued or foreign national driver’s license or photo ID card; or
    - iii. A Federal Agency. A current Federal security clearance obtained from and certified by a Federal agency may be substituted.
  - C. Contractor shall obtain the reports at least 30 days prior to any onsite work commencement. Contractor also shall attach to each report the project name, Contractor’s personnel name(s), current address(es), and a copy of the U.S. state-issued or foreign national driver’s license or photo ID card.
  - D. Contractor shall provide the City the documentation specified in the SOW affirming that Contractor has conducted required security screening of Contractor’s personnel to determine those appropriate for execution of the work and for presence on the City’s property. A list of all Contractor Personnel requiring access to the City’s site shall be attached to the affidavit.
  - E. Upon receipt by the City of Contractor’s affidavit described in (D) above and the list of the Contractor’s personnel, the City will provide each of Contractor’s personnel a City-issued Contractor ID badge that is required for access to City property that shall be worn at all times by Contractor’s personnel while on the work site. Failure to wear or produce the ID badge may be cause for removal of an individual from the work site, without regard to Contractor’s schedule. Lost ID badges shall be reported to the City’s Contract Manager. Contractor shall reimburse the City for all costs incurred in providing additional ID badges to Contractor Personnel.
  - F. The City reserves the right to deny an ID badge to any Contractor personnel for reasonable cause, including failure of a Criminal History background check. The City will notify the Contractor of any such denial no more than 20 days after receipt of the Contractor’s reports. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work under the Contract, the Contractor shall so notify the City’s Contract Manager, in writing, within 10 calendar days of the receipt of notification of denial.
  - G. ID badges to enter and/or work on the City property may be revoked by the City at any time. ID badges must be returned to the City at the time of project completion and acceptance or upon removal of an individual from the work site.
  - H. **Non-disclosure and Separation of Duties:** The Contractor shall enforce separation of job duties, require commercially reasonable non-disclosure agreements, and limit staff knowledge of City data to that which is absolutely necessary to perform job duties.
  - I. **Right to Remove Individuals:** The City shall have the right at any time to require that the Contractor remove for any or no reason at all from interaction with City any Contractor representative whom the City believes is detrimental to its working relationship with the Contractor. The City shall provide the Contractor with notice of its determination if reasonably possible. If the City signifies that a potential security violation or other immediate risk situation exists with respect to the request, the Contractor shall immediately remove such individual. The Contractor shall not assign the person to any aspect of the Contract or future work orders without the City’s consent.

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- J. Contractor is not required to obtain reports for delivery personnel, including but not limited to FedEx, UPS, Roadway, or other materials delivery persons, however all delivery personnel must present company/employer-issued photo ID and be accompanied by at least one of Contractor's personnel at all times while at the work site.
- K. Contractor shall retain the reports and make them available for audit by the City during regular business hours.

**2.8 WORKFORCE SECURITY CLEARANCE AND IDENTIFICATION (ID):**

- A. Access to the Watershed Protection Department building by the Contractor, all Subcontractors and their employees will be strictly controlled, at all times, by the City. Security badges will be issued by the Department for this purpose. The Contractor shall submit a complete list of all persons requiring access to the Watershed Protection building at least 30 days in advance of their need for access. The City reserves the right to deny a security badge to any Contractor personnel for reasonable cause. The City will notify the Contractor of any such denial no more than 20 days after receipt of the Contractor's submittal.
- B. Where denial of access by a particular person may cause the Contractor to be unable to perform any portion of the work of the Contract, the Contractor shall so notify the City's Contract Manager, in writing, within 10 days of the receipt of notification of denial.
- C. Contractor personnel will be required to check in at the security desk when entering or leaving the Watershed Protection building and security badges must be on display, at all times, when in the building. Failure to do so may be cause for removal of Contractor Personnel from the worksite, without regard to Contractor's schedule. Security badges may not be removed from the premises.
- D. The Contractor shall provide the City's Contract Manager with a list of personnel scheduled to enter the building, seven days in advance. The list shall identify the persons by name, date of birth, driver's license number, the times that they will be inside the building and the areas where they will be working. Only persons previously approved by the City for the issuance of security badges will be admitted to the building.
- E. The Contractor shall comply with all other security requirements imposed by the City and shall ensure that all employees and Subcontractors are kept fully informed as to these requirements.

**3 DEFINITIONS**

- 1. **"Affiliate"** – including but not limited to, (i) Contractor's parent, subsidiaries, sister companies, partnerships, joint ventures, franchisees, assigns, business partners, contractors, subcontractors and consultants, controlling, controlled by or under common control of Contractor as they may change from time to time and (ii) Users, as they may change from time to time.
- 2. **"Amendment"** – a written document executed by both Parties that modifies the terms of this Contract, including referenced attachments.
- 3. **"Authorized Persons"** – the Contractor personnel (including subcontractor personnel) located in the contiguous United States having successfully completed the required background check and related requirements of the Contract.

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4. **"Change Order Request"** – the written document provided by the City to Contractor requesting changes to Contractor's obligations under this Contract.
5. **"Change Order Response"** – the written document provided to the City by Contractor in response to City's Change Order Request.
6. **"City Confidential Information"** – (a) information provided by the City that is marked or identified as confidential, (b) information, including software, computer programs, documentation, processes, procedures, techniques, technical, financial, customer, personnel and other business information of a non-public nature that would reasonably be understood to be confidential whether or not marked or identified as confidential, (c) information generated by Contractor (or subcontractor) that contains, reflects, or is derived from Confidential Information, (d) Personal Identifying Information, (e) Restricted Data , and (f) all other information made confidential by federal, state or local law or regulation. City Confidential Information is part of City Data.
7. **"City Data"** – data or information (in any form) regarding the City or its customers that is created, collected, provided, obtained, or otherwise made available in connection with this Contract to an Authorized Person.
8. **"City Identified Contact"** – the person or persons designated in writing by the City to receive security incident notifications.
9. **"City"** – the City of Austin, Texas, a municipal corporation and subdivision of the State of Texas, or a department of same.
10. **"Cloud Service"** – any Service made available to Users via the Internet from a provider's servers as opposed to being provided from the City's own on-premises servers. In this instance, it would mean such Services provided by the Contractor.
11. **"Confidential Information"** – all written or oral information, which may be disclosed by either Party to the other, related to the business operations of either Party or a third party that has been identified as confidential or that by the nature of the information or the circumstances surrounding disclosure ought reasonably to be treated as confidential; **"City Confidential Information"** is a subsets of Confidential Information.
12. **"Contract"** – the final general authorizing document (including Change Orders thereto) utilized by the City to procure Services from Contractor and any attachments and appendices attached thereto.
13. **"Contract Price"** – the total amount to be paid to Contractor under any Purchase Order as it may be adjusted or changed in accordance with the terms of the final Contract.
14. **"Contractor"** – the contractor and its employees, subcontractors, agents and affiliates who are providing the services agreed to under the contract.

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15. **“Contractor Information”** – all techniques, algorithms and methods or rights thereto owned by or licensed to Contractor during the term of this Contract and employed by Contractors in connection with the Services provided to City.
16. **“Contractor Software”** – software that was developed or licensed to Contractor independent of this Contract and which Contractor utilizes to provide the Subscription Services or the Non-subscription Services.
17. **“Data Breach”** – the unauthorized access by a non-authorized person(s) that results in the use, disclosure or theft of City’s or City’s customers’ unencrypted Personally Identifiable Information or City Confidential Information.
18. **“Documentation”** – the documentation created by the Contractor for the Services provided but does not include customized documentation prepared under the Contract and which are Deliverables under the Contract, including the Statement of Work; such Deliverables are wholly owned by City and Contractor shall make no claim to such Deliverables.
19. **“Facility”** – the City designated facility or location set forth in the Purchase Order where Services are to be performed by Contractor or Supplier or software installed.
20. **“FACTA”** – the Fair and Accurate Credit Transactions Act, 15 U.S.C. §§ 1681-1681x.
21. **“Final Acceptance Date”** – the date upon which the City confirms that all Services and Work Products have been completed and tested and function in accordance with the terms of the Contract.
22. **“IaaS Subscription Schedule”** – the document, part of the Contract, executed by both Parties that sets out the Parties’ rights and obligations with respect to City’s access to and use of the IaaS services.
23. **“Infrastructure-as-a-Service” (IaaS)** – the capability provided to the consumer to provision processing, storage, networks and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications and possibly limited control of select networking components (e.g., host firewalls).
24. **“Non-Public Data”** – data typically considered internal and used for city business or mission needs. All information is considered Non-Public unless otherwise classified or explicitly defined through the Information Governance Program or official policy or procedural documents.
25. **“Public Data”** means data typically created for public release or released to the public through management decision and/or a public information request.
26. **“Restricted Data”** means data typically exempt from public disclosure requirements under the provisions of applicable state or federal law. Examples of restricted information are regulated and confidential data.

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27. **“Non-Subscription Services”** – the Services provided to City by Contractor under this Contract that are not included in the definition of Subscription Services. Non-subscription Services shall include, but not be limited to, consulting, implementation, customization and other services provided to City by Contractor under this Contract, together with all documentation provided by or otherwise required of Contractor for any of the consulting, implementation, customization or other Services it provides.
28. **“PaaS Subscription Schedule”** – the document, part of the Contract, executed by both Parties that sets out the Parties’ rights and obligations with respect to City’s access to and use of the PaaS services.
29. **“Party” or “Parties”** – the City and Contractor, individually or together, as applicable.
30. **“Personally Identifiable Information”** – information that can be used to distinguish or trace an individual's identity, either alone or when combined with other personal or identifying information that is linked or linkable to a specific individual. PII includes, but is not limited to, personal information and/or personal data. Some forms of PII are considered Restricted Data and require additional protection, including, but not limited to, Sensitive Personal Information (SPI), Sensitive and/or Protected PII, and Protected Health Information (PHI).
31. **“Platform-as-a-Service” (PaaS)** – the capability provided to the City to deploy onto the cloud infrastructure consumer-created or -acquired applications created using programming languages and tools supported by the provider. This capability does not necessarily preclude the use of compatible programming languages, libraries, services and tools from other sources. The consumer does not manage or control the underlying cloud infrastructure, including network, servers, operating systems or storage, but has control over the deployed applications and possibly application hosting environment configurations.
32. **“Purchase Order”** – the general authorizing document (including Change Orders thereto) utilized by the City to procure Services from Contractor under this Contract and any attachments and appendices attached thereto.
33. **“SaaS Software Application” and “SaaS Software”** – the computer software listed on a SaaS Subscription Schedule to which Contractor has granted City access and use as part of the Subscription Services. This includes any customization, other derivative works, upgrades, releases, fixes, patches, etc. related to the software that Contractor develops or deploys during the term of this Contract, together with all documentation provided by or otherwise required of Contractor for any of the software, customization, other derivative works, upgrades, releases, fixes, patches, etc.
34. **“SaaS Subscription Schedule”** – the document, part of the Contract, executed by both Parties that sets out the Parties’ rights and obligations with respect to City’s access to and use of the SaaS Software Application.

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35. **“Security Incident”** – any actual or potential unauthorized disclosure of, or unauthorized access to, City Confidential Information; or a violation or imminent threat of violation of computer security policies, acceptable use policies, or violation or imminent threat of violation of industry standard security practices.
36. **“Service Level Agreement” (SLA)** – a written agreement between both the City and the Contractor that is subject to the terms and conditions of the Contract that, unless otherwise agreed, includes (1) the technical service level performance promises, (i.e. metrics for performance and intervals for measure), (2) description of service quality, (3) identification of roles and responsibilities, (4) security responsibilities and notice requirements, (5) how disputes are discovered and addressed, and (6) any remedies for performance failures by or otherwise required of Contractor for any of the software, customization, other derivative works, upgrades, releases, fixes, patches, etc.
37. **“Service Levels”** – the performance specifications for work performed by the Contractor under a SaaS Subscription Schedule or Statement of Work.
38. **“Services”** – work, direction of work, installation services, technical information, technical consulting, software programming and development, software maintenance and support services, or other professional and technical services furnished by Contractor as described in detail in the final Contract.
39. **“Software”** – the computer programs in source code, object code or binary form or in any other form, including any related or included computer programs, whether owned by Licensor or licensed to Licensor by a third party which has authorized Licensor to sublicense such computer programs, and including any documentation or related materials concerning the application, use, training of users, theory of operation, maintenance or any other aspect of the Software.
40. **“Software-as-a-Service” (SaaS)** – the Services provided to the City to use the Contractor’s offering running on non-City owned infrastructure. The User does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
41. **“Specifications”** – those technical specifications attached to the Contract and to which the Services and Work Products supplied by Contractor must conform.
42. **“Statement/Scope of Work”** – a written statement of Deliverables including Services and, ultimately, the Contract, which describes the City’s Service needs and expectations.
43. **“Subscription Services”** – City’s access to and use of and Contractor’s provision of the SaaS Software Applications and other Services listed on a SaaS Subscription Schedule and in accordance with the terms and conditions set forth in the SaaS Subscription Schedule and Contract documents, as appropriate.
44. **“Third Party”** – any natural person or legal entity other than Contractor and City.

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- 45. **“Transition Date”** – the date upon which it is established to City’s satisfaction that the SaaS Software Application is stable enough to support City’s production processing.
- 46. **“User Information”** – all information directly or indirectly obtained from Users accessing the SaaS Software Applications where such information is obtained by Contractor or by any of its employees, representatives, agents or any Third Parties having contractual privity with Contractor or who are under Contractor’s supervision or control.
- 47. **“User”** – City’s employees, agents, consultants, outsourcing companies, contractors and others who are authorized by City to access and use the SaaS Software Applications and any part or portion of the Subscription Services or non-Subscription Services in the performance of their duties for City.
- 48. **“Work Product”** – all deliverables and other materials, products or modifications developed or prepared for City by Contractor under this Contract, including without limitation, any integration software or other software, all data, program images and text viewable on the Internet, any HTML code relating thereto, or any program code, including program code created, developed or prepared by Contractor under or in support of the performance of its obligations under this Contract, including manuals, training materials and documentation, but excluding the Contractor’s Software.

## Exhibit A

## Impact of gas supersaturation on the development of gas bubble trauma in paedomorphic *Eurycea* salamanders

### Background

Dissolved gas supersaturation (DGS) has been observed in Barton Springs, with levels up to 134% in the Upper Barton Springs (1). Morbidity and mortality of the Barton Springs salamander (*Eurycea sosorum*) has been linked to this condition, where DGS exceeded 110%. During those events mortality was consistent with gas bubble trauma (GBT). During the development of GBT, the accumulation of bubbles within the body and inside the cardiovascular system has a range of undesirable consequences, which include the formation of lesions and development of necrotic tissue that can lead to secondary infections (2). Along with bubble formation, hemorrhage (bleeding from blood vessel) commonly occurs throughout the body, including in the gills, under the skin in the subcutaneous layer, and the eye (2, 3). Where GBT has been implicated as the cause of death, it is presumed to be associated with bubbles in the cardiovascular system impairing blood flow, resulting in reduced oxygen uptake (2). Measurements of dissolved gases from June 2002 to May 2013 indicate that DGS occurs frequently in the Barton Springs Complex. During this period, almost half (312) out of 672 measurements recorded levels of DGS (>110%) (N. Bendik, e-mail communication, June 14, 2022) that are associated with GBT and morbidity in salamanders (1).

DGS occurs in many natural and man-made aquatic systems when the total gas pressure in solution exceeds atmospheric pressure (2, 3). When this occurs, there is the potential for gas bubbles to develop in water and in aquatic organisms. DGS often arises from anthropogenic factors due to high pressure discharge from hydroelectric dams, warm water discharge from cooling facilities, algal blooms, and pressurized injections of gas or air into water systems. Additionally, DGS occurs naturally in groundwater from aquifers, wells, and springs due to high pressures and/or increased temperature at the water surface (2, 3). DGS is harmful to aquatic organisms, resulting in a number of harmful or fatal physiological and histological changes. Collectively, these changes are referred to as GBT due to the formation of bubbles in the tissues, and was initially described in fishes (2, 3). It is associated with issues in the cardiovascular system, swim bladder, gills, dermal surfaces, eyes, intestinal tract, swimming ability, growth, and blood chemistry (2–4). In amphibians, bubble formation occurs in the gills, intestines, gallbladder, vascular system, and external surfaces (5–7). Several vertebrate and invertebrate species in the Upper Barton Springs have been observed to experience signs of GBT, including buoyancy challenges (1) and bulging eyes (a characteristic of GBT) (2–4) has been frequently observed in Eliza Spring mosquitofish (*Gambusia* sp.) (N. Bendik, e-mail communication, July 12, 2022).

In addition to the damage caused by bubbles, DGS has been linked to increased bacterial and fungal infections and physical deformities in tadpoles (6). The stress associated with DGS and GBT may exacerbate the susceptibility of amphibians to other co-occurring environmental stressors, including elevated temperature and water contaminants (8, 9). Thus, exposure to DGS may have a range of short and long-term consequences for the health and survival of these animals.

As a paedomorphic plethodontid salamander species, Barton Springs salamanders retain the aquatic larval morphology with a set of gills (10). Paedomorphic salamanders rely primarily on the gills for respiration; however, a substantial amount of gas exchange occurs through the skin (11, 12). Reduction in O<sub>2</sub> uptake at the gills due to bubble formation on the gills and in branchial capillaries may lead to increased cutaneous (skin) respiration through increased capillary perfusion; this occurs in some salamanders when O<sub>2</sub> demand is elevated (13).



## Exhibit A

### Goal and Objectives

The goal of this project is to determine the impact of DGS on gas exchange in paedomorphic salamanders by accomplishing the following two objectives: 1) assessing the role of DGS on triggering gas bubble trauma in salamanders, and 2) determination of the response of the gas exchange system in salamanders to DGS on the development of GBT. The proposed research project meets the **project goal** of a “study of salamander biology” and addresses the **funding priority questions**, “what conditions trigger gas bubble trauma in the Barton Springs salamander and how does their gas exchange system respond in those conditions”.

### Approach and Methodology

Due to the nature of the experiments and that the Barton Springs salamander is listed as endangered under the Endangered Species Act, we propose to use the Fern Bank salamander, *Eurycea pterophila*. Fern Bank salamanders are found in abundant numbers in Comal Springs in Landa Park New Braunfels and the required number of individuals can be collected at field sites under guidance from biology and watershed staff at the Cities of Austin and New Braunfels. The number of Fern Bank salamanders required for this project is 84 individuals; to account for any mortalities, an extra 10% will be collected, for a total of 92 individuals. Collections will take place by the PI (Ryan Shartau) and a graduate student over two visits to New Braunfels during the first year of the project.

The Fern Bank salamander is an ideal surrogate model species for laboratory studies to determine the acute and chronic effects of DGS and GBT in Barton Springs salamander as they are both paedomorphic salamanders with a similar life history and body size. Existing permits from Texas Parks and Wildlife will be used for field collections and animal care permits will be obtained through The University of Texas at Tyler Institutional Animal Care and Use Committee to conduct the proposed experiments. Collected salamanders will be transported to The University of Texas at Tyler aquatics facility where they will be reared in a recirculating, temperature controlled aquatics system until they reach the experimental size of 6 cm. The project is expected to be completed in 2 years.

#### *Objective 1: Conditions triggering gas bubble trauma*

In Upper Barton Spring, DGS has been recorded at levels of 134%. Levels of DGS exceeding 110% coincided with mortality and morbidity events of 2002 and 2003 (1). The first task for achieving this objective will be to determine the response of salamanders to acute and chronic DGS while monitoring the development of GBT as characterized by the presence of gas bubbles along the in the gills and on the external surface (2, 14). Most literature on DGS and GBT is focused on fish, with little known about the sensitivity of salamanders to DGS or the appearance of GBT. Therefore, we will conduct a pilot study to assess the sensitivity of salamanders to DGS to confirm if our planned DGS levels and exposure times induce responses in Fern Bank salamander and assess the relevance of extrapolating fish literature to salamanders. Here, salamanders will be placed individual into plastic cages (10 cm x 10 cm x 10 cm) which will then be placed into tanks (15 cm x 20 cm x 50 cm) at one per tank. Six salamanders will be exposed to DGS of 110, 120, 130, 140, or 150% until signs of GBT are observed or for a maximum of 7 days (d). The 7 d exposures will start at the lowest DGS (i.e. 110%) before going to the next exposure level. Salamanders will be given a 48 h recovery period between exposures in water not supersaturated (DGS = 100%); feeding will occur throughout exposures. Observations in the pilot will be non-lethal and occur at 8-hour intervals for the presence of bubbles on or under the skin, between the external gill filaments and limb digits, and exophthalmia (condition when the eye protrudes from its socket). Additionally, changes in behavior and buoyancy will be documented as increased buoyancy is likely an indicator of internal bubble accumulation.

Gas supersaturation will be achieved using a contact cone (Pentair Aquatics Eco-Systems, Inc.); this creates supersaturated water by driving water and air from a region of high velocity to a region of low

## Exhibit A

velocity which forces bubbles to dissolve into the water. This set up is commonly used in aquaculture systems to achieve supersaturation of >200% (15). The level of DGS will be adjusted to provide the desired DGS and will be monitored using a portable Total Gas Pressure (TGP) meter (Oxyguard Handy TGP meter). Water temperature will be maintained at 22°C, consistent with temperature found in the Barton and Comal Springs. Dissolved oxygen will be monitored to ensure it remains saturated (80-100%) relative to the gas pressure exposure, which is similar to levels measured in the Barton Springs complex.

Following the pilot study, the first task will be to examine the development of GBT following exposure to DGS of 110, 130, or 150% of atmospheric pressure for either 6, 24 h, and 7 and 30 d; pilot study data will inform us if levels of DGS and exposure duration need to be adjusted. Salamanders at 100% TGP will be sampled at 30 d as the control group. Similar to the pilot study, salamanders will be placed individually into plastic cages at one per tank. A total of six individuals will be used to achieve  $n = 6$  for each sampling point. These time points and DGS are based on prior studies in bullfrog tadpoles (5) and adult bullfrog (6), and African clawed frogs (7) which documented mortality and occurrence of GBT in these species. These are consistent with studies examining the development of GBT in fishes (16–19).

Throughout exposures in tasks 1 and 2, salamanders will be monitored for signs of GBT, such as bubble accumulation on the body surface, limbs, and external gills, and increased buoyancy (as an indicator of internal bubble formation). If salamanders show signs of severe distress or exophthalmia, they will be euthanized by immersion in 2% MS-222 (tricaine methanesulfonate; Syndel USA) buffered with 10 mM sodium bicarbonate until disappearance of the withdrawal reflex as observed by pinching a phalangeal articulation of a hind leg with a pair of forceps (20) and sampled immediately. At the selected time points, animals will be euthanized and assessed for the development of GBT based on the criteria as described by Fidler and Miller (2) which include subcutaneous emphysema, and bubbles in the vessels of the gills and rest of the cardiovascular system, including the heart.

Tissues collected will be used to examine formation of lesions and/or other histopathological changes associated with DGS. Specifically, we will look for signs of hemorrhage in the gills and subcutaneous layer, and endothelial and vascular lesions in the gills, heart, and external epithelium (21). Collection of tissues for histology will occur using previously described methods to examine lesions induced by DGS which involves rapid fixation using Bouin's fixative. Tissue will then be transferred to isopropanol for storage until processing where they will be embedded in paraffin, sectioned, then mounted and stained with hematoxylin and eosin (21). Histological sections will be examined and lesion characterized based on histological descriptions for GBT from Fidler and Miller (2), and Speare (21).

Blood will be collected from the femoral vein using a heparinized 30-G syringe (20) and hemoglobin concentration will be measured photometrically; hematocrit will also be measured via centrifugation in glass capillaries. An aliquot of blood will be used to measure blood lactate (an indicator of anaerobic metabolism) and reactive oxygen species (as an indicator of cellular stress associated with hypoxia) using the lactate dehydrogenase enzymatic method (22) and thiobarbituric acid-reactive substances (TBARS) assay (23), respectively. Mean differences of measured parameters between treatments and duration of exposure will be analyzed quantitatively using two-way analysis of variance or if assumptions are not met, non-parametric tests will be used.

#### *Objective 2: Response of gas exchange system to DGS*

To achieve the second objective, the impact of DGS on the gas exchange system will be examined. In paedomorphic salamanders the gills are the primary site of respiration, however, cutaneous respiration across the skin remains important (11). As gas supersaturation and the development of GBT results in bubble formation in the gills impairing gas exchange, importantly oxygen uptake, examining the role of cutaneous respiration during supersaturation will be important to determine if salamanders can minimize the effect of DGS by favoring cutaneous respiration over branchial respiration during DGS exposure.

## Exhibit A

A divided chamber respirometer will be used to assess the relative contribution of branchial and cutaneous oxygen uptake during DGS. This set up has been used previously to measure the contribution of branchial and cutaneous oxygen consumption in fish and invertebrates ranging in size from 0.05 – 4 g (24–26). Salamanders will be lightly anesthetized using 0.2% MS-222 and passed through a small hole in latex dental dam that separates the respiratory chambers. The latex dams will be fitted immediately posterior of the gills to separate them from the body. The relative contribution of branchial and cutaneous respiration during DGS at 150% will be assessed by examining oxygen consumption when supersaturated water is added to only the anterior or posterior compartment while the other is at 100% DGS. These will be compared with both compartments at 100 and 150% DGS. Water PO<sub>2</sub> will be recorded by oxygen microelectrodes in both chamber halves simultaneously once sealed. Trial will be terminated once chamber oxygen reaches 40 mmHg PO<sub>2</sub>; this value is based on hypoxia tolerance studies in aquatic salamanders (13). A total of six individuals will be examined at each DGS.

Oxygen consumption rate will be calculated as follows based on established protocols (24–26). The mean slope will be obtained from the linear portions of three recorded O<sub>2</sub> cycles for each chamber half in a trial. Background respiration from blank trials will be subtracted from mean slopes to yield a change in PO<sub>2</sub> per hour, this will be used to calculate oxygen uptake for chamber halves. The sum of both chambers will give the whole-body oxygen uptake rate and be expressed as a function of total salamander wet mass. Mean differences in oxygen consumption will be analyzed quantitatively to determine whether DGS exert greater effect through the gills or skin.

### Research and Management Implications

This proposal addresses important knowledge gaps identified in the recovery plan for Barton Springs salamander (1) regarding the role of DGS on the development of GBT. This information can be used to improve and develop appropriate conservation and management strategies for this species and other paedomorphic salamanders including the Austin blind salamander (*E. waterlooensis*). Research into the physiological responses and tolerances of salamanders to environmental conditions of interest is critical for understanding how salamanders respond to changes in DGS. Use of these results can be incorporated into models for DGS thresholds and exposure times, informing managers of the type of action and time required to enact strategies to mitigate the development of GBT. This work may indicate that strategies focusing on preventing bubble formation or lowering the DGS level below their threshold for GBT may be effective for use in Barton Springs.

The impact of DGS is dependent on depth in the water column, as bubble formation at a given DGS level will be less likely to occur at greater depths compared to shallow water due to greater hydrostatic pressure. Bubble formation at a certain DGS level will occur at, or above a threshold depth, and if the animal remains below that depth, bubble growth, and thus development of GBT can be avoided. However, if the animal moves above the threshold depth, bubble formation will occur and bubble growth will continue to occur regardless of depth. By understanding the time and DGS levels at which GBT occur, managers can have an improved understanding of how likely GBT is to occur throughout the springs.

Finally, as Fern Bank salamanders share a similar life history with other members of the *Eurycea* salamanders, including the Barton Springs salamander and Austin Blind salamander, the Fern Bank salamander may represent an ideal model to develop water quality criteria guidelines for other conditions due to their relative abundance and ease of access for research. In conjunction with Fern Bank salamanders, a limited number of Barton Springs salamanders can be subjected to LC50 trials for specific water quality conditions to ground truth the use of Fern Bank salamander as a model. This can serve as a refinement of the approach used by past studies to examine the effects of water quality on Barton Springs salamander (8) and allow for a more comprehensive assessment of water quality criteria necessary to promote the conservation of this species.

## Exhibit A

**Dissemination and Community Involvement**

Project results will be disseminated by providing material for outreach to the City of Austin Watershed Youth Education and giving presentations for the general public through interested organizations, such as the Barton Springs Salamander Conservation Fund and Austin City Council. Presentations to scientific oriented audiences will occur at regional scientific conferences, such as the Texas Academy of Science or the Southwestern Association of Naturalists. Results of this work will be reported to the Barton Springs Salamander Conservation Fund and disseminated to the international scientific community by publication in high quality peer-reviewed publications that focus on animal physiology, such as the American Journal of Physiology – Regulatory, Integrative and Comparative Physiology.

There is substantial educational and stewardship value in this project due to the unique biology and ecology of the Barton Springs salamander and its relatives. As a water breathing salamander with gills that inhabits a popular city park, there is great potential to engage the public about salamander biology through venues such as Splash! and educate them about these unique animals. Educational and outreach activities will benefit the stewardship of the Barton Springs system by allowing individuals to understand how they can help conserve this ecosystem and its salamanders.

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## Exhibit A

**Barton Springs Research Proposal Outline**  
**Supporting Information****Project Participants**

The project team consists of two individuals from The University of Texas at Tyler (Tyler, Texas) and two individuals from the University of British Columbia (Vancouver, Canada). Their expertise and prior experience are described below.

**Dr. Ryan Shartau** is an Assistant Professor at The University of Texas at Tyler in the Department of Biology. Dr. Shartau is an experimental animal physiologist with over 15 years of experience working on projects involving a variety of aquatic animals, including amphibious fishes and reptiles, focusing on gas exchange and toxicology. He has experience with the proposed physiological performance and technical measurements. Much of this experience is highly relevant to the proposed project as these projects have investigated the physiological responses of aquatic animals to variations in water quality, particularly in the context of gas exchange and respiration of amphibious fishes and reptiles. Depending on the project, these projects have required him to lead and manage international teams of collaborators of up to 10 individuals. His recent project on the effect of elevated CO<sub>2</sub> on fish respiration had him managing researchers from six institutions in three countries. He has been the lead author on 12 peer-reviewed scientific publications and authored a total of 17, and has experience managing grant budgets.

He will serve as the project manager overseeing this project and will coordinate with other project participants. In addition, he will complete the experimental work, supervise graduate and undergraduate student involvement, conduct data analysis, and prepare the findings for dissemination to the public, City of Austin, and scientific community.

**Ms. Marsha Williams** is a Research Associate and Instructor at The University of Texas at Tyler in the Department of Biology. She has over 13 years of research experience with aquatic animals in Texas. Her experience includes collecting and handling amphibians, and teaching the Herpetology course. She has been involved in several projects investigating the impact of water quality on aquatic animals. She will provide guidance related to husbandry of salamanders and experimental set-up.

**Ms. Naomi Pleizier** is a PhD Candidate at the University of British Columbia (Vancouver Canada) in the Department of Zoology. She has 10 years of experience working on aquatic vertebrates, and 5 years of experience working on projects investigating gas bubble trauma. As an expert on gas supersaturation, she has experience with all aspects of designing experiments to examine the impact of supersaturation on aquatic vertebrates, including setting up a system to generate and measure supersaturated gases. Her work on this topic has produced 5 peer-reviewed publications since 2020, with others in preparation. Ms. Pleizier will provide technical and experimental guidance for supersaturated gas exposures and analysis of results.

**Dr. Colin Brauner** is a Professor in the Department of Zoology at the University of British Columbia (Vancouver Canada). He is an animal physiologist with over 30 years of experience and is internationally recognized for his work in aquatic research and conservation, and has over 180 peer-reviewed publications. He has experimental experience with gas exchange, toxicology, and gas bubble trauma in aquatic vertebrates. He has been involved in several projects using divided chamber respirometry to investigate the contribution of gill and skin respiration in different aquatic vertebrates and has studied gas bubble trauma in fishes. Dr. Brauner will provide technical and experimental guidance related to these areas for this project.

## Exhibit A

**Project Budget Justification**

Personnel – Funding for two-month salary for Dr. Ryan Shartau during Year 1 is requested to support spending an average of 27 hours per week over 12 weeks from June to August 2023 to complete tasks associated with Objective 1 including animal maintenance and completion of experiments. One-month salary is requested for Ryan Shartau during Year 2 to support spending an average of 14 hours per week over 12 weeks from June to August 2024 to complete tasks associated with Objective 2, conduct data analysis, and begin work on the manuscript and final project report. In total, three-month salary calculated at 3 times 1/9 of Dr. Shartau's base salary of \$71,070 plus the University of Texas at Tyler fringe benefits at a rate of 35% = \$31,982.

Travel – Funding of \$1,525 is request for Year 1 for travel. Salamander will be collected from Landa Park in New Braunfels which is 286 miles from UT Tyler, two collection trips are anticipated. At the State of Texas mileage rate of \$0.585 per mile, the total mileage request is \$669 (1144 miles at \$0.585 per mile). Each collection trip will require one overnight stay and meals for two days for two people (myself and one graduate student to assist). For accommodations and meals, I request a total of 4 nights accommodations (2 for Ryan Shartau and 2 for a graduate student) (2 nights at \$96 per night for 2 people = \$384) and meals for 4 days per person (4 days at \$59 per day for 2 people = \$472).

Materials and Supplies – Funding of \$8,808 is requested for Year 1 for materials and supplies. Animal collection supplies such as nets, aerators, and coolers (\$250). Animal housing supplies, which include food, tanks, and tubing (\$1250). Tricane-S (100 g; Syndel) for use as an anesthetic (\$169). Contact cone (52-inch height, 18-inch diameter) to create supersaturated gas (Pentair AES; model 730123; \$1726.12). Compressed cylinders of air to supply contact cone (\$66/each X 4 = \$132). Respirometry chamber (Loligo Systems; \$814) and two oxygen probes (VWR; \$1005.71 each). Consumables for sampling including syringes, needles, hematocrit tubes, liquid nitrogen, tissue cassettes, and analytical standards (\$1000). Kits for assays – TBARS (Sigma-Aldrich; \$538), lactate (Sigma-Aldrich; \$562), and hemoglobin (Abcam; \$355). Total material and supplies = \$8,808

Total project budget – \$42,314

## Exhibit A

**Project Schedule**

The following milestones that correspond with the project schedule table are listed below:

**Milestone: Animal acquisition and growth.** Comal Springs salamanders will be collected from Landa Park in New Braunfels and reared to target size of 6 cm (~2.5 inches) for use in Objective 1 and 2. This will occur between March 2023 and August 2023.

**Milestone: Pilot study.** The sensitivity of salamanders to dissolved gas supersaturation will be assessed. This will inform on subsequent dissolved supersaturated gas exposures in Objective 1 and 2. This will occur in September 2023 and November 2023.

**Milestone: Response to acute and chronic dissolved gas supersaturation.** Salamanders will be exposed to four levels of dissolved gas supersaturation for either 6 or 24 h, or 7 or 30 d and sampled. It will take six weeks per dissolved gas supersaturation level to complete this task and will take place between November 2023 and March 2024.

**Milestone: Histopathological and physiological changes to the cardiorespiratory system.** Completion of histopathological and analytical analyses will occur to determine changes taking place. This will also be quantitatively analyzed using appropriate statistical methods. These activities will take place over May 2024 to July 2024.

**Milestone: Role of branchial and cutaneous gas exchange in gas bubble trauma.** Divided chamber respirometry will be used to assess the impact of dissolved gas supersaturation on gill (branchial) and skin (cutaneous) contribution to gas bubble trauma. This will be completed from August 2024 to November 2024.

**Milestone: Data analysis of samples.** From December 2024 to January 2025, completion of data and statistical analysis, and interpretation of results will take place. This will allow the findings to be disseminated amongst the funders, the public, at scientific meetings, and in peer-reviewed publications.

**Milestone: Preparation of manuscript and final report.** From December 2024 to February 2025 the final report for the project will be written. Additionally, a manuscript will be written for publication in the target journal of the American Journal of Physiology – Regulatory, Integrative and Comparative Physiology to allow these findings to be widely disseminated amongst the international scientific community in a high-quality peer-reviewed journal.

## Exhibit A

## Project Schedule (revised December 13, 2022)

Milestone	Dates: March 2023 to February 2025																							
	Year 1												Year 2											
	2023											2024											2025	
	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	J 01	F 02
Salamander collection and rearing																								
Experimental preparation																								
Pilot study																								
1 Conditions that trigger gas bubble trauma																								
Response to acute and chronic DGS																								
1.1 110% TGP exposure																								
130% TGP exposure																								
150% TGP exposure																								
100% TGP exposure (control)																								
Histopathological and physiological changes to the cardiorespiratory system																								
1.3 Hemoglobin analysis																								
Histopathology analysis																								
TBARS assay																								
Lactate assay																								
2 Role of branchial and cutaneous gas exchange in GBT																								
Data analysis																								
Manuscript preparation and final report																								