INTERLOCAL COOPERATION AGREEMENT BETWEEN TEXAS A & M UNIVERSITY – CORPUS CHRISTI AND THE CITY OF CORPUS CHRISTI – CORPUS CHRISTI WATER REGARDING ENVIRONMENTAL MONITORING STATIONS

WHEREAS, Texas A & M University – Corpus Christi ("TAMU-CC") and the City of Corpus Christi ("City") are authorized by Chapter 791 of the Texas Government Code to enter into an interlocal cooperation agreement;

WHEREAS, Section 791.035 of the Texas Government Code states that a local government and an institution of higher education or university system may contract with one another to perform any governmental functions and services;

WHEREAS, Section 791.035 provides that if the terms of the contract provide for payment based on cost recovery, any law otherwise requiring competitive procurement does not apply to the functions and services covered by the agreement;

NOW, THEREFORE, the parties hereto agree as follows:

1. PURPOSE. The purpose of this Agreement is for TAMU-CC, acting through its Conrad Blucher Institute for Surveying and Science, to perform operation and maintenance of 13 environmental monitoring stations in Nueces Bay, Nueces River, Oso Creek and throughout Corpus Christi.

2. STATEMENT OF WORK. TAMU-CC acting through its Conrad Blucher Institute for Surveying and Science agrees to perform services as outlined in Exhibit A for each year of this Agreement.

3. PERIOD OF PERFORMANCE. The initial term of this Agreement is January 1, 2024 through December 31, 2024 unless terminated as provided herein. This Agreement may be renewed for up to two additional one-year terms by written agreement of the City Manager or designee and authorized representative from TAMU-CC, unless terminated as provided herein.

4. FEES FOR SERVICES PROVIDED.

A. For January 1, 2024 through December 31, 2024, the City agrees to pay TAMU-CC up to $217,545.00 as payment in full for all services provided herein, as further outlined on Exhibit B. The payment shall be paid on a monthly basis upon receipt and review of monthly invoice. In subsequent years of this Agreement, the fee to be paid by the City for services performed by TAMU-CC under this Agreement shall not be increased by more than three percent each year.

B. The monthly payments constitute payment in full for all TAMU-CC costs to perform all of the the services described in Exhibit A for each twelve-month term. Each party acknowledges that all expenditures under this agreement shall be paid with current revenues of the paying party.

C. The parties acknowledge that continuation of this agreement beyond City's current fiscal year which ends September 30 is subject to the annual City budget process and appropriation of funds. If funds are not appropriated sufficient to pay for this Contract in the then-current City budget year, then this Contract shall terminate upon ten business days' written notice and City shall have no further payment obligation to TAMU-CC.

D. Each governing body, in performing governmental function or in paying for the performance of governmental functions hereunder, shall make that performance or those payments from current revenues legally available to that party.

5. TERMINATION. Performance under this agreement may be terminated by either party with or without cause upon 30 days written notice.

6. NOTICES. All notices to parties under this Agreement shall be in writing and sent to the names and address stated below. Either party to the Agreement may change the name and address by notice to the other in accordance herewith, and any change shall take effect immediately upon receipt of the notice.

Texas A&M University – Corpus Christi
Attn: Kimberly Hawkenson
Director of the Office of Sponsored Research Administration
6300 Ocean Drive, Unit 5844, Corpus Christi, Texas 78412

City of Corpus Christi - Corpus Christi Water
Attn: Chief Operating Officer
P.O. Box 9277
Corpus Christi, TX, 78469

7. AMENDMENTS AUTHORIZED. The representatives who were authorized to sign this agreement are authorized to execute minor amendments to this agreement, to extend deadlines or authorize minor changes in the scope of work.

8. SEVERABILITY. If any of the provisions of the agreement or the application thereof to any person or circumstance, is rendered or declared illegal for any reason, or shall be invalid or unenforceable, the remainder of the agreement and the application of the provision to other persons or circumstances shall not be affected thereby, but shall be enforced to the greatest extent by applicable law. The City and TAMU-CC agree that this agreement shall be reformed to replace the stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

9. DISPUTE RESOLUTION PROCESS. To the extent applicable, the dispute resolution procedures provided in Chapter 2260 of the Texas Government Code will be used to resolve contract claims under this contract.

10. MISCELLANEOUS. This agreement constitutes the entire agreement between the parties relative to the subject matter, and may only be modified or amended by a written agreement signed by both parties. It shall be construed in accordance with the laws of the State of Texas.

IN WITNESS WHEREOF, the parties have caused this agreement to be executed by their authorized representative, to be effective as of date of last signature.

Texas A&M University – Corpus Christi

DocuSigned by:
By: _____
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Name: Kimberly Hawkenson
Title: Director of the Office of Sponsored Research Administration
Date: 11/3/2023

CITY OF CORPUS CHRISTI

ATTEST

_____
Rebecca Huerta
City Secretary

_____
Peter Zanoni
City Manager

APPROVED AS TO FORM:

This_____day of_____, 2023

_____
Aimee Alcorn-Reed, Assistant City Attorney
For City Attorney

To be inserted:
Exhibit A Statement of Work
Exhibit B Costs for Services

Exhibit A

SCOPE OF WORK
NUECES BAY AND NUECES RIVER WATER QUALITY MONITORING, OSO CREEK WATER LEVEL AND CITY OF CORPUS CHRISTI ENVIRONMENTAL MONITORING

January 1, 2024 – December 31, 2026

SUMMARY
This Scope of Work (SOW) provides for the operation, maintenance, and dissemination of 13 real-time environmental data collection stations for systems located in the Corpus Christi Bay area to include the Nueces River and Bay, Oso Creek, and locations throughout the City of Corpus Christi. A rainfall alert system is included for six meteorological stations.

The SOW for the first year includes the replacement of the Hydrolab datasondes that are used at the three (3) SALTS stations. The existing Hydrolab datsondes have exceeded their life expectancy and are becoming increasingly unreliable in the field. Due to their age, replacement parts and probes are hard to come by and without replacement probes, there could be large gaps in data collected.

TAMU-CC has identified the Manta + 20 datasonde as a viable replacement sensor for the SALTS stations. These sensors have a three (3) year warranty and will collect and disseminate the required water quality data.

RESEARCH OBJECTIVES
The Conrad Blucher Institute for Surveying and Science (CBI) at Texas A&M University Corpus Christi (TAMU-CC) has been operating and maintaining real-time water quality monitoring stations in the Nueces River Delta for the City of Corpus Christi since November 1991. These systems were installed to assist city personnel with understanding the effects of freshwater inflows on salinity levels in the Nueces Bay system. The data collected at the water quality stations is used to assist City of Corpus Christi personnel in determining effects of fresh water released from the Wesley Seal Dam as part of an amended Agreed Order between the City and the Texas Commission on Environmental Quality (TCEQ). Other benefits of the data collection include collaboration with other researchers in the Nueces delta such as the Coastal Bend Bays and Estuaries Program (CBBEP) and the Nueces River Authority.

The City of Corpus Christi has designed and built a diversion channel and pumping system that, when activated, pumps freshwater from the Nueces River into the Nueces delta and adjacent wetlands starting at the head of the Rincon Bayou channel. The freshwater diversion pumping system is designed to redirect freshwater flowing into Nueces Bay proper to the Nueces Delta in order to most effectively utilize available freshwater by diverting it to the area with the most potential for increased biological productivity. Currently, UTMSI, HRI, and CCS are conducting long-term ecological studies of the effects of this diversion. One salinity monitoring station (NUDE2: 27° 53' 19" N, 97° 34' 10" W) located along the Rincon Bayou was established in 2009 to determine the fate of freshwater diversions from the pipeline. The salinity monitoring stations

located in the Nueces Delta are funded by the CBBEP and are not covered in the scope of this proposal but are a part of an overarching hydrodynamic monitoring system.

Nueces Bay and Nueces River Water Quality Monitoring

Salinity Monitoring

Nueces Bay consists of three (3) water quality monitoring stations *(Image 1)*:

1. SALT01 (27° 50' 21" N, 97° 26' 38" W)
2. SALT03 (27° 51' 5" N, 97° 28' 55" W)
3. SALT05 (27° 53' 30" N 97° 36' 37" W) in the Nueces River

Primary parameters measured at all water quality monitoring stations include specific conductance and water temperature. Additionally, ancillary parameters measured including dissolved oxygen and Ph (Table 2). The stations consist of sensors, cellular modem, datalogger and a power system. The station locations are in such a manner to track freshwater inflows into Nueces Bay using salinity levels as an indicator of freshwater movement. Relief for required freshwater releases may be taken by the city if the salinity levels in Nueces Bay fall below the Upper Salinity Bounds. A daily running report http://lighthouse.tamucc.edu/salrel produced by CBI and the Nueces River Authority (NRA) shows the current freshwater relief status.

Station components and configuration are listed in Table 1 and Table 2, respectively.

Image 1: Nueces River Delta, & Bay water quality monitoring locations

Table 1: SALTS Component List

Component	Type
Water Quality Multiprobe	Hydrolab MS 5 (replaced by Manta 20+ if approved)
Data logger	CR1000x
IP Modem	RV50 w/antenna and booster
Power system	Miscellaneous

Table 2: SALTS Station Configuration

CBI Id.	Name	Temp	Specific Conductance	Ph	Do/%sat
072	SALT01	X	X	X	X

074	SALT03	X	X	X	X
076	SALT05	X	X	X	X

Stage Height Monitoring

Three (3) stage height monitoring stations are located on bridges along the Oso Creek (*Image 2)*

4. OCWL01 (~27° 43' 18.26" N 97° 27' 28.55" W) at Saratoga Rd. near Calle Cuernavaca
5. OCWL02: (~27° 41' 19.82" N 97° 25' 45.36" W) at Weber Rd. near Yorktown Blvd.
6. OCWL03: ~27° 39' 24.89" N 97° 24' 5.89" W) at South Staples St. near Oso Pkwy.

These data collection stations will collect stage height, air temperature, precipitation, barometric pressure, and relative humidity (Table 4). These stations provide water levels relative to the bridge, adjacent structures along with meteorological information.

Station components and configuration are listed in Table 3 and Table 4, respectively.

Image 2: Stage Height monitoring locations

Table 3: Oso Creek Component List

Component	Type
Radar Water Level sensor	Nile 502
Weather Transmitter	Vaisala WXT-530
Data logger	CR1000x
IP Modem	RV50 w/antenna and booster
Power system	Miscellaneous

Table 4: Oso Creek Station Configuration

CBI Id	Name	Air Gap	Air Temp	Wind Speed	Wind Direction	Barometric Pressure	Relative Humidity	Precipitation
242	OCWL01	X	X	X	X	X	X	X
243	OCWL02	X	X	X	X	X	X	X
244	OCWL03	X	X	X	X	X	X	X

METEOROLOGICAL MONITORING

Seven (7) meteorological (MET) stations are located throughout the City of Corpus Christi (*Image 3).*

1. CCWXAM: (27° 42' 54" N 97° 19' 43" W), TAMUCC
2. CCWXRF: (27° 40' 34" N 97° 21' 9" W), Rodd Field Rd
3. CCWXCM: (27° 43' 54" N 97° 22' 40" W), Carmel Pkwy
4. CCWXCP: (27° 41' 6" N 97° 25' 0" W), Cedar Pass Dr.
5. CCWXDE: (27° 45' 51" N 97° 24' 15" W), Del-Mar College East campus
6. CCWXDW: (27° 46' 24" N 97° 26' 24" W) Del-Mar College West campus
7. CCWX07: (27° 52' 4.2" N 97° 37' 54.5" W) at the Nueces River pump station

These stations help City technicians determine frequency of collection of water samples during rain events to satisfy their storm water runoff (MS4) permit. During rain events, data are provided via the following web site: Rainfall 2 (tamucc.edu). An email notification will send an email to the designated City personnel at the following thresholds to be renewed at a 24-hour window once the Primary alert is issued.

- INITIAL: 0.05 in
- WARNING: 0.07098 in
- PRIMARY: 0.1 in
- SECONDARY: 0.11 in

Station components and configuration are listed in Table 5 and Table 6, respectively.

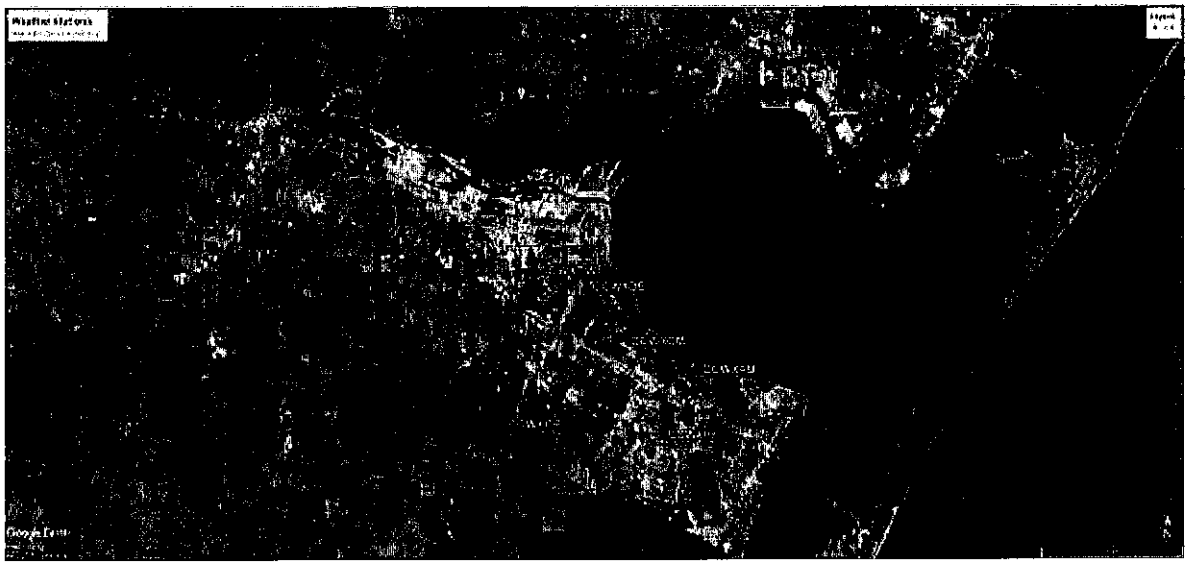

Image 3: Meteorological station location

Table 5: MET Station Component List

Component	Type
Weather Transmitter	Nile 502
Data logger	CR1000x

IP Modem	RV50 w/antenna and booster
Power system	Miscellaneous

Table 6: MET Station Configuration

Station No.	Name	Temp	Wind	Rainfall	Air Pressure	Humidity
236	TAMU-CC	X	X	X	X	X
275	Rodd Field	X	X	X	X	X
276	Carmel Parkway	X	X	X	X	X
277	CCWXCP Cedar Pass	X	X	X	X	X
278	CCWXDE Del Mar East	X	X	X	X	X
279	CCWXDW Del Mar West	X	X	X	X	X
256	CCWX07Nueces River	X	X	X	X	X

OPERATION, MAINTENANCE AND MANAGEMENT

Project Management

The Principal Investigator (PI) for this project will be **Ms. Devon Steffan**, designated Co-Principal Investigator will be Mr. Zachary Hasdorff and Mr. Hugo Mahlke **(Co-PI)**. The **PI** or his designee shall be responsible for all project management activities of this project to include but not be limited to personnel assignment, scheduling, service, maintenance, accounting, reporting, and invoicing.

General Tasks

TAMU-CC shall designate an operator (or operators) to perform the following local duties:

a. Perform Quality Assurance/Quality Control checks on all data collected from each station ensuring all data are within expected ranges.
b. Schedule all maintenance activities
c. Maintain field activity logs.
d. Maintain site visit logs.
e. Maintain inventory of sensors/components
f. Calibrate datasondes prior to field deployment.
g. Clean and post calibrate all datasondes upon removal from the field.
h. Maintain calibration logs for each sensor.

Table 7 - Sensor Service schedule

CBI Station No.	Station Name	Sensor	Service Interval
072	SALT01	WQ	2 Weeks (+/- 1 week)
074	SALT03	WQ	2 Weeks (+/- 1 week)
076	SALT05	WQ	2 Weeks (+/- 1 week)
236	CCWXAM	MET	Quarterly
275	CCWXRF	MET	Quarterly
276	CCWXCM	MET	Quarterly
277	CCWXCP	MET	Quarterly
278	CCWXDE	MET	Quarterly
279	CCWXDW	MET	Quarterly
256	CCWX07	MET	Quarterly
242	OCWL01	WLS	Quarterly
243	OCWL02	WLS	Quarterly
244	OCWL03	WLS	Quarterly

NOTE: The service interval has been changed from the 6-month site visit to a quarterly due to completed upgrades made site visit to improve data quality and collection capabilities. The natural flora and fauna in the vicinity of many sites will require a closer monitoring of each data collection site.

Sub Task 1 – Scheduled Maintenance
TAMU-CC will perform the tasks identified below. If a station issue arises outside of scheduled maintenance, TAMU-CC will determine if there are funds in the budget for an unscheduled visit and make every effort to maintain data dissemination. If major issues are identified, the PI for designee will notify the city and discuss options for repair.

Nueces Water Quality Monitoring

a. Upon arrival at each station, readings will be recorded from the datasonde prior to removal.
b. Replace datasonde with a clean, calibrated unit.
c. Upon replacement, readings from the installed datasonde will be recorded.
d. Independent salinity readings will be taken using a portable refractometer and recorded.
e. Inspection of all station hardware, cables, antennas, enclosure, and solar panels. Panels will be cleaned and tested, battery tested, and components will receive required maintenance or repair as needed. All sensors and systems will be tested for proper operation.
f. Data will be downloaded from the data collection system for archival.
g. Communications will be checked and verified.
h. Perform other operation and maintenance duties as required to maintain data collection.

Oso Creek Stage Height Monitoring

a. Field readings will be documented.
b. Inspection of all station hardware, cables, antennas, enclosure, and solar panels. Panels will be cleaned and tested, battery tested, and components will receive required maintenance or repair as needed.
c. All sensors and systems will be tested for proper operation.
d. Verify stage height offset.
e. Perform other operation and maintenance duties as required to maintain data collection.

Corpus Christi Meteorological (MET) Monitoring

a. Field readings will be documented.
b. Inspection of all station hardware, cables, antennas, enclosure, and solar panels. Panels will be cleaned and tested, battery tested, and components will receive required maintenance or repair as needed.
c. All sensors and systems will be tested for proper operation.
d. Perform other operation and maintenance duties as required to maintain data collection.

DATA COLLECTION
CBI has collected data from remote data collection platform (DCP) since 1995 utilizing our internal database and proprietary automated processes. Data are generally collected every 6

minutes from all DCP's via an IP modem installed at each station. Data collection initiates the following process:

a. Upon acquisition, raw data files are validated ensuring data header files meet archived station information files within the database.
b. Once the data packet is verified, the data are archived in raw form within the database.
c. Data packets are processed for dissemination.
d. Staff generally performs QA/QC checks of all data noting suspect or missing data or sensor malfunction.
e. Each station is assigned a CBI ID number (see Tables 4, 6, and 7) and data is disseminated via station pages at https://lighthouse.tamucc.edu/overview/:active::qc:cbi%7Cccwd%7Chydro:,nuebay/
f. Daily and ten-day salinity levels are provided per month via http://lighthouse.tamucc.edu/salrel.

INSTRUMENT CALIBRATION

This section provides general tasks how instruments will be calibrated.

a. Datasondes will be calibrated following established procedures and manufacture recommendations.
b. The instrument will be placed in a known standard for each parameter and set to match its readings to that standard; all calibration standards used will be NIST traceable. The instruments will then be post-calibrated during which the readings for each parameter will be recorded in the same standard in which it was calibrated. The biofouling will then be removed, and any maintenance recommended by the manufacturer will be performed.
c. All calibration and post-calibration records will be available upon request.

REPLACEMENT PARTS AND EQUIPMENT

TAMUCC owns and maintains the instrumentation and equipment purchased with funds from this project. In the case of damage, TAMU-CC will repair or replace instrumentation as needed to ensure a continuous data collection record if enough funds or spares are available. If additional replacement equipment beyond what is kept in inventory is needed, every effort will be made by TAMU-CC and the CCUD to replace needed components.

STATION DOCUMENTATION

Following each scheduled or emergency station visit, TAMU-CC shall complete and archive a Site Report, using CBI's proprietary database. Site visit reports contain information related to any service, maintenance, and/or repair action performed.

TAMU-CC will archive station records for a period of three (3) years and available to City personnel upon request.

NOTE: There are no scheduled progress reports required within this SOW

Exhibit B

REPLACEMENT PARTS AND EQUIPMENT

There are minimal replacement parts for this project. All effort will be made to replace parts and supplies with what is on hand.

BUDGET SUMMARY

		SUB-TOTALS (year 1)
Salaries		$ 73,383
Benefits		$ 26,883
Travel		$ 17,530
Supplies		$ 1,940
Other Expenses		$ 6,640
• Batteries, solar panels, regulators		
• Monthly modem cost		
• Freight		
Upgrades		$43,146
Facilities & Administrative Costs (IDC) at 38% MTDC (Yr1)		$48,023
	TOTAL YEAR 1:	**$ 217,545** (O&M and Upgrades)
	TOTAL YEAR 2:	**$ 182,983**
	TOTAL YEAR 3:	**$ 187,926**
	GRAND TOTAL:	**$ 588,454**

Year 1 (January 1, 2024-December 31, 2024) award amount will be invoiced in equal, monthly installments over the first 12-month period of this contract and in subsequent budget years. Upgrades will be invoiced in one lump sum after the procurement process of the upgraded sensors is completed.

TAMU-CC anticipates continuing service for up to three (3) years, and the annual project budget will not increase by more than 3% percent on average over the three years.

TAMU-CC's DHHS-approved Facilities and Administrative Cost rate will be applied in Budget Year1 at 38.0% and Years 2 and 3 at 41% of a Modified Total Direct Cost base in accordance with the approved rates.