Monitoring Success of Dredged Material Placement in the Nueces Delta

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ANCHOR QEA

2025 Post-Construction Monitoring Report

Prepared for Coastal Bend Bays & Estuaries Program

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ABBREVIATIONS

BU	beneficial use
BWM	breakwater marsh
CBBEP	Coastal Bend Bays & Estuaries Program
cm	centimeter
EPA	U.S. Environmental Protection Agency
IQR	interquartile range
NAVD88	North American Vertical Datum of 1988
LiDAR	Light Detection and Ranging
mph	mile per hour
N/A	species not identified in placement area
Project	Project No. 2404: Monitoring Success of Dredge Placement in the Nueces Delta Project
QAPP	Quality Assurance Project Plan
RPIC	remote pilot in command
RTK-DGPS	dual-frequency real-time kinematic differential global position system
UAS	unmanned aerial system
USACE	U.S. Army Corps of Engineers

1 Introduction

This *2025 Post-Construction Monitoring Report* has been prepared on behalf of the Coastal Bend Bays & Estuaries Program (CBBEP) for its Project No. 2404: Monitoring Success of Dredge Placement in the Nueces Delta Project (Project). The Nueces Delta is located along the northwest shoreline of Nueces Bay approximately 11 miles northwest of downtown Corpus Christi, Texas, in Nueces and San Patricio counties (Figure 1). Since 2002, the Nueces Delta has receded hundreds of feet, and pockets of open water have expanded, causing the loss of high-value marsh habitats. Beginning in 2008, CBBEP completed feasibility studies to determine the best strategy for protecting this critical environment. Based on the result of the initial feasibility study and additional studies and design work, CBBEP completed construction of an approximately 3,600-foot rock breakwater system in 2023. Following breakwater construction, CBBEP focused efforts toward replacing sediment that had been lost over the years. To address this need, CBBEP partnered with the U.S. Army Corps of Engineers (USACE) to expand the rock breakwater system by approximately 2,000 feet and to implement strategies for the beneficial use (BU) of dredged sediments from USACE's final phase of the Corpus Christi Ship Channel Improvement Project. Construction for expanding the rock breakwater system was completed in 2024, and activities associated with placement of dredged material within Nueces Delta were completed on March 3, 2025.

At the request of CBBEP, Anchor QEA involvement continued past Project design and involved contributions to construction oversight during initial breakwater construction activities and dredged material placement. In addition, Anchor QEA conducted post-construction marsh monitoring immediately following the completion of dredged material placement and secondary post-construction marsh monitoring to assess Project success. While secondary post-construction monitoring was initially planned to occur 1 year following the completion of dredged material placement, CBBEP elected to proceed with secondary post-construction monitoring in fall 2025 due to funding requirements. Anchor QEA was similarly tasked with developing an adaptive management plan should monitoring results deem necessary. While this plan was initially envisioned as a separate and stand-alone document, CBBEP requested that adaptive management considerations be included in this *2025 Post-Construction Monitoring Report* due to timing constraints of the available Project funding.

The goal of 2025 post-construction monitoring is to assess the success of marsh restoration initiatives and includes the collection and analysis of topographic, vegetative, and photogrammetry data. The 2025 post-construction monitoring methods and associated Quality Assurance Project Plan (QAPP) were developed collaboratively by CBBEP, Anchor QEA, and the U.S. Environmental Protection Agency (EPA) under EPA Cooperative Agreement Nos. CE-98685820 and 4T-02549201-0. Methods implemented during monitoring, monitoring results, and preliminary adaptive management strategies are summarized in the following sections.

2 Methods

As summarized in the QAPP, detailed methodologies were developed for data collection and analysis for all 2025 post-construction monitoring activities. Primary monitoring components included the collection of topographic data, vegetation composition and coverage data, and unmanned aerial system (UAS) photogrammetry. Data collected were post-processed and analyzed to gauge Project success and inform preliminary adaptive management strategies. Methodologies presented in the QAPP depict the preliminary extent of dredged material placement areas, as the actual extent of dredged material placement was unknown. Consistent with the QAPP, adjustments were made during the monitoring survey to more accurately capture areas where dredged material was ultimately placed. Additional adjustments were made to specific data collection point locations based on the actual extent of dredged material placement activities and existing topographic and vegetative characteristics. Table 1 provides a summary of the actual placement areas and their total approximate acreage. The four areas where dredged material was placed include breakwater marsh (BWM)-2, BU Delta 3, BU Delta 4, and Elbow BU.

Table 1
Summary of Placement Areas

Placement Area[1, 2]	Acreage[3]
BWM-2	67.4
BU Delta 3	21.4
BU Delta 4	13.4
Elbow BU	80.2

Notes:

1. Initial dredged material placement plans included several additional placement areas. However, due to finite dredged material volumes and other operational limitations, placement areas were limited to four discrete areas.
2. The lateral extent of placement areas was based on a combination of field observations and data provided by USACE.
3. Acreages shown in the QAPP and other Project documents differ because the exact limit of dredged material placement was unknown.

All topographic data were collected using a Trimble R10 or R8 dual-frequency real-time kinematic differential global position system (RTK-DGPS) working from the virtual reference station corrections network. The nominal accuracy of the typical dual-frequency RTK-DGPS is ±1 centimeter (cm) horizontal and ±2 cm vertical. Position coordinates and elevations were then plotted at Anchor QEA offices with ArcGIS. Standard operating procedures for GPS (USACE 2016) were used. U.S. Geological Survey National Geodetic Survey benchmarks were surveyed prior to the start and end of each workday.

Preliminary topographic monitoring methods were developed using transects spaced approximately 300 feet apart spanning each placement area. Topographic points were situated at approximately

15-foot intervals along each transect. During the monitoring survey, additional observation points were recorded as needed if significant topographic variations were identified along a given transect. The horizontal and vertical position of observation points along each transect were recorded using a Trimble R8 or R10 RTK-DGPS. The preliminary topographic monitoring plan included approximately 1,800 observation points throughout the four placement areas. Figure 2 shows the preliminary topographic transects and points used during the monitoring survey. During the survey, data collection was limited to areas where material placement occurred. Material placement boundaries, topographic transect locations, and topographic observation point locations were adjusted as appropriate based on as-built survey results and field observations of where actual placement boundaries deviated from initial estimates.

A topographic comparison between data recorded during Anchor QEA's 2025 post-construction monitoring survey and USACE's as-built survey was performed to identify any areas of significant erosion within the placement areas. Survey points from Anchor QEA's and USACE's datasets were plotted in the ArcGIS Pro GIS software. Geospatial analysis tools were used to identify the nearest USACE survey point to the Anchor QEA point. This analysis assigned the appropriate USACE elevation to an Anchor QEA survey point and was then used to calculate the difference in elevations, which is identified herein as the elevation delta value (Anchor QEA elevation minus USACE elevation). A positive delta value indicates net deposition, and a negative delta value indicates net erosion at each discrete Anchor QEA survey point.

Marsh vegetation species composition and coverage were collected using 1-meter quadrats and custom field logs. The location of monitoring quadrats was recorded using either a submeter Trimble GEO 7X, a Trimble R8, or R10 RTK-DGPS. For each quadrat location, field logs included the following information: placement area, observation point, dominant species, species composition, percent coverage for each recorded species, and basal height of dominant species in cm. Preliminary observation point locations were situated along topographic survey transects to better characterize spatial trends across vegetative coverage. As such, the elevation at each observation point was recorded during topographic survey efforts. However, if observation points were shifted off topographic survey transects during the survey due to site conditions, the elevation of the relocated observation point was recorded.

Marsh vegetation monitoring was conducted using a 1-meter quadrat, and 140 preliminary quadrat observation points were established across the site. The 140 quadrat points were distributed proportionately among the placement areas based on the preliminary size of each placement area. Within each placement area, quadrat points were distributed evenly based on total transect length to ensure proportionate distribution within each placement area. The quadrat points were limited to topographic transects to better characterize spatial trends across vegetative coverage and to inform adaptive management opportunities. Figure 3 shows the approximate location for each quadrat

based on the preliminary survey plan. During the survey and when feasible, observation points in unvegetated areas at the time of the 2025 post-construction survey were shifted to the nearest area where vegetation is established but remains within the same placement area. If the relocated quadrat was located off the transects, additional elevation data was recorded to facilitate elevation comparisons. Once final quadrat locations were established, the horizontal position and elevation were documented for each.

The quadrat consisted of a 1-meter square constructed from 1-inch PVC pipe. Five strings were tied vertically, and five strings were tied horizontally spaced 16.6 cm apart across the PVC frame. This created a 25-point grid within the 1-meter quadrat. The quadrat was laid on top of the vegetation at each observation point. Vegetative cover (coverage), frequency of occurrence (number of times the string "crosshairs" intersect part of a plant), and the number of individual plants by species within the quadrat were recorded. The dominant species was determined based upon areal coverage within the quadrat.

UAS imagery was collected to document overall site conditions and overall vegetative cover. UAS data were collected using a DJI AIR 2S UAS. The DJI AIR 2S uses a 20-MB RGB camera with a 1-inch complementary metal-oxide semiconductor camera. Images taken by the camera were stored internally on the UAS on a SanDisk SD card with a rating of UHS-1 Speed Class 3 or above.

Operation of the UAS was completed by a remote pilot that has obtained Part 107 of the Federal Aviation Administration certification to operate a UAS for commercial purposes within the United States. The DJI AIR 2S was operated by a single remote pilot in command (RPIC), launched from the survey vessel, and operated using modest ground station (e.g., remote controller, phone, and tablet). Anchor QEA deployed a two-person team to ensure safe site ingress/egress and provide a visual observer to support UAS operation by the RPIC.

To ensure safety of the UAS team and the protection of Project equipment, UAS surveys occurred when wind speeds at the altitude at which missions are flown (typically 300 feet above ground surface) were below 15 miles per hour (mph). Consideration was also given to gusting wind conditions, and the safe operating air speed was reduced further when wind conditions were gusty. Weather projections were assessed before each UAS survey using a third-party application and/or local weather forecasts. When third-party applications and/or local weather forecasts indicated a high likelihood that wind speeds that exceed UAS thresholds, survey efforts were suspended and rescheduled.

Prior to mobilizing for UAS surveys, the UAS team developed flight plans using cloud-based aerial mapping software (DroneDeploy). Flight plans included the establishment of flight transects above the target mapping area. Flight plans were generally flown to an elevation of 300 feet above ground surface and captured images while traversing transects spaced approximately 130 feet apart at a

speed of 18 mph. The images targeted a 75% front overlap and 65% side overlap. The UAS captured images at approximately 3-second intervals until it had completed each transect in the flight plan.

After developing a detailed flight plan, the UAS team mobilized to the site via a private vessel that operated as the base. The location of the base was strategically established at the time of the UAS survey to maximize Project efficiencies but depended on site access constraints (e.g., draft capabilities of available vessel and water depths). When necessary, the base was relocated for different placement area UAS surveys.

Immediately prior to initiating UAS surveys, the RPIC conducted a series of preflight checks, in compliance with Part 107 rules. The preflight checks included consultation of aeronautical charts, Notice to Airmen, Temporary Flight Restrictions, and weather conditions to determine if any restrictions applied to the planned flight area. Once the UAS survey was initiated, the UAS automatically executed the pre-established flight plan. Flying at the designated altitude, the UAS traversed each flight plan transect and captured images until it had recorded the entire transect. Each image captured with the UAS included metadata that includes the date and time when the image was collected; make, model, and focal length of the camera; altitude relative to the takeoff point; and horizontal GPS location.

Upon completion of the UAS surveys, the collected images were imported from the camera SD cards to an Anchor QEA company server. The operator scanned images captured during the survey and removed any images that were blurred or would otherwise negatively impact the quality of the processed orthomosaic images. The remaining images were then uploaded from the Anchor QEA server to DroneDeploy. Within DroneDeploy, the operator verified the horizontal location of the images relative to the survey area and flight transects, then directed the software to process the orthomosaic image of the placement area. The orthomosaic image targeted a resolution of 1 inch per pixel.

After generating the orthomosaic images for the placement areas (one covering Elbow BU and the other covering the other three placement areas), each image was visually inspected to estimate the lateral extent of emergent vegetation within the placement areas. Where possible, the location and results from marsh vegetation monitoring plots were referenced to better correlate aerial signatures, suggesting presence of emergent vegetation. The orthomosaic image was imported into ArcGIS software, and the approximate lateral extent of emergent vegetation was mapped using the software. This mapping was used to quantify vegetative coverage within each placement area and is represented on report maps.

3 Post-Construction Monitoring Results

The 2025 post-construction monitoring survey was conducted between September 5, 2025, and October 9, 2025. A total of 182.4 acres was surveyed. Topographic surveying included the collection of 1,658 survey points. Marsh vegetation surveying included a total of 141 quadrat locations. UAS surveying included collection of 1,464 photographs. Figures depicting survey data are provided as Figure 4 through 7, tabular topographic data are provided in Appendix A, and digitized quadrat data are provided in Appendix B.

Consistent with methodologies described in Section 2 and the approved QAPP, several marsh vegetation survey quadrats were relocated throughout the survey. Most of the placement areas were unvegetated, so several quadrats were relocated away from areas containing pre-construction vegetation to avoid skewing of monitoring data. Similarly, several quadrats were shifted to capture areas of new growth. During the survey, observations of anthropogenic effects were generally limited to tracks from heavy machinery operation in BWM-2, BU Delta 3, and Elbow BU. Evidence of wind erosion was also observed during gusting conditions within BU Delta 3 and Elbow BU. No notable observations of anthropogenic effects were observed in BU Delta 4. When surveying along the margins of placement areas, discernable boundaries between hard substrate and softer sediments were often encountered, likely correlating to the lateral extent of placement activities.

3.1 Overall Conditions

Observations made during the survey indicate that each placement area appears relatively stable with very limited evidence of subsidence, erosion, and accretion or similar. Substrate types across each placement area is composed of predominantly sandy clay material with pockets of hard sandy material also present. Along the margins of placement areas or in areas with marginal evidence of material placement was observed, soft sediment and saturated surface were encountered. Where present, this soft sediment layer ranged from a few inches to >3 feet deep. Based on site observations, soft sediment appears to be the predominant pre-construction sediment type, suggesting that limited to no dredged material was placed in areas currently supporting soft sediment.

Throughout the duration of the survey, very limited evidence of new growth was observed. Densely vegetated areas were generally along the margins of placement areas and are likely associated with pre-existing stands of marsh vegetation rather than new growth that has occurred following dredged material placement. These densely vegetated margins predominantly contain climax species less likely to establish quickly after material placement. Less densely vegetated areas were observed sporadically throughout the placement areas and contained pioneer species that generally emerge quickly after site disturbances. Based on the location and densities of these pioneer species, it is likely that vegetation is naturally encroaching toward the center of placement areas from margins

where existing marsh vegetation persists or the ebb and flow of tide are capable of providing suitable seed load. Interior portions of each placement areas were generally unvegetated. In addition to observations made related to topography and vegetation, wildlife usage was also observed through the Project area. Specifically, roosting activities was observed throughout BU Delta 3 and Elbow BU. Roosting activities appeared most closely associated with gull and tern species.

Overall site conditions can be seen via UAS imagery, which is included as Figures 4.1 through 4.5. It should be noted that portions of interior imagery within BU Delta 4 were not included in the post-processed orthomosaic imagery dataset. Imagery captured in this portion of the placement area could not be accurately stitched by DroneDeploy due to the lack of static aerial signatures. This portion of BU Delta 4 was composed of open, turbid water that often presents stitching issues, as there are not shared signatures to align adjacent photographs.

3.2 Topographic Survey Results

During the 2025 post-construction monitoring survey, elevation data were recorded at a total of 1,658 discrete survey points. As described in Section 2, the locations of topographic survey points were modified during the survey based on the observed extent of placement activities. The location of each survey point is shown in Figures 5.1 through 5.5, and tabular data are provided in Appendix B.

Topography observed within BWM-2 was relatively flat. Tidal influence was evident throughout the placement area, including significant tidal exchanged between the breakwater gaps. Active tidal flow was observed during both incoming and outgoing daily tides. This tidal exchange appears to have resulted in the development of small scour and erosion features. The most significant tidal exchange observed was present in the northern portion of BWM-2. Water was seen rushing across placed material and flowing between breakwater gaps. Significant evidence of heavy machinery operation was also observed through the placement area and is depicted in UAS imagery. The northwest boundary of BWM-2 exhibited a discernable line of placement material with surrounded undisturbed areas consisting of soft sediment.

Topography encountered at BU Delta 3 was generally flat but included a gentle ridge running southeast to northwest. This slight ridge may have been created by a dredge pipe's outfall location. Based on the hydraulic placement methods used, it is possible that heavy sandy or clay sediments settled closer to the center ridge with finer silt sediments traveling farther from the outfall location. This potential settling process may have caused softer substrate to migrate toward placement area boundaries. Heavy machinery tracks were also visible throughout BU Delta 3. Evidence of tidal ebb and flow were observed, as depicted by UAS imagery, and was generally located near the margin of the placement area. Tidal influence was also evident in the form of erosional features and shallow scours within the finer, soft sediment.

Topography observed at BU Delta 4 was relatively flat with a slightly elevated area in the northern portion of the placement area. This higher elevation area was generally surrounded by featureless, unvegetated bay bottom. Survey observations suggest placement activities within BU Delta 4 was limited to the northern portion of the placement area, leaving the southern majority of the area likely undisturbed. However, these areas were not omitted from the monitoring survey, as it is possible that finer sediments were carried into these areas. Where placement activities were evident within BU Delta 4, substrates consisted primarily of sand material with less prevalent occurrences of soft sediments. Where compacted sand material was absent, the area was surrounded by featureless, submerged bay bottom consisting of deep soft sediments.

Elbow BU is the largest of the placement areas surveyed and contains a higher elevation center with very gentle downward slopes in all directions. Finer surface sediments found throughout appear to have been transported by rain and wind processes. These processes have likely resulted in the exposure of small gravel and shell fragments at the surface. Substrate in the center, higher elevation portion of Elbow BU consisted of hard clay that is relatively compacted. Generally, increasingly sandy clay substrate was observed along the boundary of the placement area. Sediments appear to be slowly migrating or sluffing along the bayward margin of the placement area, creating a shallow shelf. This shelf is along the northern and eastern boundary of the placement area and contains finer material than what was observed within the center of the placement area. In comparison to adjacent marsh habitats, material placed within Elbow BU appears to be at a similar or slightly elevated grade. However, a discernable bluff, approximately 2 to 3 feet in height, was observed along the open-water boundary situated along the southern margin of the placement area. The overall elevation of Elbow BU appears to be situated slightly higher than normal tide levels for the region. Several pits or holes were also observed along the Nueces Bay shoreline. The origin of these features could not be determined. However, it is possible that they formed as a result of substrate variation or erosional energy associated with wind and wave action. Within the Elbow BU, heavy machinery tracks were also evident and observed along the bayward margin of the placement area.

Table 2 provides a summary of topographic data recorded during the 2025 post-construction monitoring survey and during the as-built survey for each placement area.

Table 2
Summary of Topographic Survey Results

		BWM-2	BU Delta 3	BU Delta 4	Elbow BU
	Acreage[1]:	67.4	21.4	13.4	80.2
2025 Post-Construction Survey[2]	No. of elevation points recorded:	138	180	623	717
	Minimum elevation[4]:	-0.67	-0.50	+0.21	-0.82
	Maximum elevation[4]:	+3.01	+2.04	+3.35	+6.25
	Average elevation[4]:	+1.34	+0.24	+1.76	+3.30
As-Built Survey[3]	No. of elevation points recorded[5]	527	20,329	2,122	34,941
	Minimum elevation[4]:	-1.02	-0.11	-0.19	+1.02
	Maximum elevation[4]:	+2.87	+3.88	+1.95	+9.56
	Average elevation[4]:	+1.06	+1.73	0.54	+2.96

Notes:

1. Acreage of each placement area is based on adjustments made during the 2025 post-construction survey and only includes areas that appear to have received fill material.
2. Source: 2025 post-construction monitoring survey conducted by Anchor QEA between September 5 and October 8, 2025
3. Source: as-built survey conducted by Callan Marine and transmitted by USACE on July 9 and 31, 2025
4. Unit is feet NAVD88.
5. The large discrepancy between the number of points between the 2025 post-construction survey and USACE as-built survey is based on survey methodologies used. The 2025 post-construction survey was completed using on-ground survey techniques, and the USACE as-built survey was completed using LiDAR remote sensing.

Consistent with the methods described in Section 2, elevations recorded during the 2025 post-construction monitoring survey were compared to elevations recorded during the as-built survey that occurred immediately following dredged material placement. It is important to note that as-built surveys were completed using UAS Light Detection and Ranging (LiDAR), while the 2025 post-construction survey was completed using on-ground RTK-DGPS survey methods. Similarly, as-built survey data provided by USACE did not include full coverage of the final placement area extents established herein. Due to the differences in survey methodologies and survey coverages, analysis of as-built and 2025 post-construction survey results were limited to areas where adequate data were available. The difference between survey elevations was determined by subtracting the 2025 post-construction monitoring survey elevations from the nearest as-built survey elevations recording with the resulting metric being identified as a "delta." A positive delta value indicates the 2025 post-construction monitoring elevation is higher than the as-built survey elevation, which suggests the area is increasing in elevation. A negative delta value indicates the 2025 post-construction monitoring elevation is lower than the as-built survey elevation, which suggests the area is decreasing in elevation. Calculation of delta values return numerous outlier data points within each placement area. Review of areas containing outlier delta values do not appear associated with excessive elevation increase or decrease and do not appear to accurately represent overall trends across placement areas. Based on field observations, these outliers are much more likely attributed

to differences in survey methods or survey bias, rather than substantial changes to elevations between the as-built survey and 2025 post-construction monitoring event.

In comparing as-built survey elevations to 2025 post-construction monitoring survey elevations, each placement area appears relatively stable with no significant evidence of subsidence, erosion, accretion, or similar. Delta values for BWM-2 range from -0.79 to 1.66 feet and average 0.37 foot. The standard deviation of delta values within this placement area is 0.42, and seven outliers were identified. Delta values for BU Delta 3 range from -0.78 to 0.91 foot and average 0.09 foot. The standard deviation of delta values within this placement area is 0.26, and 15 outliers were identified. Delta values for BU Delta 4 range from -0.53 to 0.99 foot and average 0.10 foot. The standard deviation of delta values within this placement area is 0.19, and two outliers were identified. Delta values for Elbow BU range from -2.27 to 1.26 feet and average 0.28 foot. The standard deviation of delta values within this placement area is 0.36, and 48 outliers were identified. In total, delta values across all surveyed areas range from -2.27 to 1.66 feet, average 0.21 foot, exhibit a standard deviation of 0.31, and contain 72 outliers.

Table 3 provides a summary of elevation comparison data for each placement area, and Figures 6.1 through 6.5 depict the location or each analyzed elevation point and its associated delta value.

Table 3
Comparison of Elevations between As-Built Survey and 2025 Post-Construction Monitoring Survey

	BWM-2	BU Delta 3	BU Delta 4	Elbow BU
Minimum delta between as-built and 2025 survey[1]:	-0.79	-0.78	-0.53	-2.27
Maximum delta between as-built and 2025 survey[1]:	1.66	0.91	0.99	1.26
Average delta between as-built and 2025 survey[1]:	0.37	0.09	0.10	0.28
Median delta between as-built and 2025 survey[1]:	0.39	0.10	0.07	0.32
Standard deviation:	0.42	0.26	0.19	0.36
Number of outliers:[2]	7	15	2	48

Note:

1. Unit is feet.
2. This was determined using ArcGIS Pro's data engineering modeled regression relationships. ArcGIS Pro typically identifies outliers using the IQR method in which values are flagged as outliers if they fall below the Q1 - 1.5 x IQR or above Q3 + 1.5 x IQR.

3.3 Marsh Vegetation Survey Results

As stated in Section 1, the secondary post-construction survey was initially intended to occur 1 year after the completion of dredged material placement. However, due to modifications to the Project schedule and limitations of the available funding, the survey was conducted approximately 7 months following completion of dredged material placement and demobilization activities associated with BWM-2, BU Delta 3 and BU Delta 4 (March 3, 2025) and approximately 17 months after the completion of dredge material placement and grading activities within Elbow BU (April 26, 2024). It is Anchor QEA's best professional judgment that this reduced time frame between construction activities at Elbow BU and the secondary post-construction monitoring event had a significant influence on monitoring results, specifically monitoring related to marsh vegetation composition and coverage.

During the 2025 post-construction monitoring survey, data were collected at a total of 141 quadrat locations. The location of each quadrat in respect to the four placement areas is shown in Figures 7.1 through 7.5. Digitized quadrat data sheets are provided in Appendix B. Quadrats were spread across the placement areas proportionate to placement area acreages consistent with the methodologies described in Section 2. Several quadrats were shifted throughout the survey

In total, data were recorded at 141 quadrat locations, with 11 quadrats recorded in BWM-2, 46 in BU Delta 3, 17 in BU Delta 4, and 67 in Elbow BU. Overall, the extent of revegetation within placement areas was extremely limited. 121 of 141 quadrats recorded were unvegetated entirely. Of the 20 quadrats that contained vegetation, 1 was in BWM-2, 1 was in BU Delta 3, and 18 were in Elbow BU. It should be noted that based on a review of aerial imagery recorded in 2022 prior to dredged material placement (USDA 2022), nine of the vegetated quadrat locations appear to be

associated with areas that were vegetated prior to construction activities. Therefore, only 7 of the 141 quadrat locations appear to be associated with new growth.

Where vegetation was observed, species composition was limited to seven species. These species include American glasswort (*Salicornia virginica*), turtleweed (*Batis martima*), sea purslane (*Sesuvium portulacostrum*), salt heliotrope (*Heliotropium curassavicum*), smutgrass (*Sporobolus indicus*), southern sea blite (*Suaeda linearis*), and black mangrove (*Avicennia germinans*). Areas of new growth were generally composed of sea purslane, salt heliotrope, smutgrass, and southern sea blite. American glasswort, turtleweed, and black mangrove appear to be more closely tied to areas that contained established vegetation prior to construction activities. Where present, American glasswort, turtleweed, and sea purslane exhibited the highest frequency of occurrence (density). Other species such as salt heliotrope, smutgrass, southern sea blite, and black mangroves occurred at reduced densities.

Based on the limited extent of new growth, discrete mapping of vegetation using UAS imagery was limited. When vegetation was observable on UAS imagery, it was often comprised of sporadically spaced individual plants, rather than relatively contiguous stands of numerous species and individual plants. Accordingly, no contiguous beds were mapped within the BWM-2, BU Delta 3 or BU Delta 4 placement areas. Of the placement areas, Elbow BU appeared to contain the greatest extent of new growth. While the overall percent coverage when considering the entire area was very limited, these mapped areas contained pockets of vegetation that ranged in coverage from approximately 50% to 100%. Four discrete areas that totaled approximately 3.0 acres were mapped within Elbow BU. These areas were generally along the eastern and southern margin of the placement area, likely suggesting that natural recruitment of vegetation is occurring from adjacent, established beds of marsh vegetation or by seed stock being transferred by incoming tides.

Table 4 provides a summary of key metrics recorded at quadrat survey points for each placement area.

Table 4
Summary of Marsh Vegetation Survey Results

		BWM-2	BU Delta 3	BU Delta 4	Elbow BU
Acreage:		67.4	21.4	13.4	80.2
Mapped extend of new growth (acres):		0.0	0.0	0.0	3.0
No. of marsh quadrats recorded:		11	46	17	67
Total Vegetative Coverage (No. of Quadrats Within Total Percent Coverage Range)	0%	10	45	17	49
	0.1%–10.0%	0	0	0	0
	10.1%–30.0%	0	0	0	0
	30.1%–50.0%	0	0	0	3
	50.1%–70.0%	0	0	0	2
	70.1%–90.0%	0	0	0	3
	90.1%–100%	1	1	0	10
Vegetative Composition (Average Frequency of Occurrence [Average Basal Height in cm])	American glasswort (*Salicornia virginica*):	N/A	18/25 [15 cm]	N/A	15.3/25 [9.7 cm]
	Turtleweed (*Batis maritima*):	25/25 [20 cm]	7/25 [10 cm]	N/A	19.3/25 [14 cm]
	Sea purselane (*Sesuvium portulacastrum*):	N/A	N/A	N/A	17.8/25 [2 cm]
	Salt heliotrope (*Heliotropium curassavicum*):	N/A	N/A	N/A	5.3/25 [4 cm]
	Smutgrass (*Sporobolus indicus*):	N/A	N/A	N/A	6.5/25 [3 cm]
	Southern sea blite (*Suaeda linearis*):	N/A	N/A	N/A	1/25 [2 cm]
	Black mangrove (*Avicennia germinans*):	N/A	N/A	N/A	8/25 [40 cm]

Note:

1. Acreage of each placement area is based on adjustment made during the 2025 post-construction survey and only includes areas that appear to have received fill material.

4 Adaptive Management Plan

Data collected as part of the 2025 post-construction monitoring survey were further analyzed to determine preliminarily recommended adaptive management strategies for achieving Project goals. The goals of the Project are to restore marsh habitat that has been lost due to ongoing wind and wave erosion along the bay shoreline and to restore marsh that has been lost within the Nueces Delta marsh complex due to subsidence, reductions in sediment supply, and breaching of the shoreline. Initial Project activities include the installation of an approximately 5,600-foot-long segmented breakwater system along the shoreline of Nueces Delta and the hydraulic placement of dredged material into areas of the marsh complex targeted for restoration. In combination, these Project activities are expected to combat continued erosive forces and to offset marsh subsidence. Placement of dredged material in subsided areas is intended to mirror elevations present at adjacent marsh habitats and to promote marsh re-establishment. While implementation of proactive restoration techniques for re-establishing marsh vegetation has not been included, it is anticipated that by creating and protecting suitable elevations, re-establishment of marsh vegetation will occur naturally due to the presence of immediately adjacent and prolific marsh habitats.

As detailed in Section 3, results from the 2025 post-construction monitoring survey suggest material located within each placement area is relatively stable with only slight evidence of erosion or subsidence identified. Where observed, evidence of erosion was generally associated with breakwater gaps at BWM-2 or along the exposed margin of Elbow BU. While elevations appear relatively stable, survey results provided limited evidence for the re-establishment of marsh vegetation. Lack of new growth within placement areas can most likely be attributed to the lack of time elapsed between the completion of dredged material placement and 2025 post-construction survey event and lack of proactive plant introduction. Within Elbow BU, construction activities were completed on approximately April 26, 2024. Within BWM-2, BU Delta 3 and BU Delta 4, construction activities were completed on March 3, 2025. Post-construction surveys were completed between September and October 2025. Based on the limited time elapsed between the completion of construction activities and the post-construction surveys (approximate 17-months for Elbow BU; approximately 7-month for BWM-2, BU Delta 3 and BU Delta 4) and the lack of human intervention, the Project was anticipated to yield limited marsh vegetation reestablishment.

For this region of the Texas Gulf Coast, the growing season for marsh habitats generally occurs from February through October, with peak growth occurring from April through August when warm temperatures and longer days occur (TAMU-CCAG 2025). While Project activities optimized timing of construction activities by limiting construction during the peak growing season, the lack of human intervention likely limited the potential for new growth to occur in a short 7-month period for BWM-2, BU Delta 3, and BU Delta 4 and an approximate 17-month period for Elbow BU. Due to the perceived lack of a substantial seed source, especially within interior portions of the placement areas,

placement areas were not likely to exhibit substantial new growth in a single growing season. Material placed originated from the Corpus Christi Ship Channel Deepening and Widening Project, which included submerged sediments not previously associated with vegetated habitats. Based on dredged material origination, sources for seed load without human intervention are limited to material naturally transported from the adjacent marsh (e.g., anemochory, zoochory, and hydrochory). This hypothesis is substantiated by survey results that documented that areas containing new growth were generally located along the placement area boundaries immediately adjacent to existing marsh habitats or along the bayward edge of placement areas regularly influenced by the ebb and flow of tide. Anemochory, zoochory, and hydrochory potential is generally increased for these areas positioned based on the reduced distance seed load would need to travel or the frequency in which seed load can be introduced by tide.

While the lack of time since material placement and the lack of substantial seed source appear to be the most likely factor for the lack of vegetation establishment, other potential considerations may contribute. Other factors could potentially include the elevations created, nutrient characteristics of material, compaction of placed material following construction activities, tidal restrictions or a limited hydroperiod, or anthropogenic human and/or animal disturbances.

Based on the results of the 2025 post-construction monitoring event and an analysis of factors likely influencing Project success, Anchor QEA developed a set of preliminarily recommended adaptive management techniques. Based on differing circumstances for each placement area, techniques were analyzed separately for Elbow BU and for delta marshes (BWM-2, BU Delta 3, BU Delta 4). The most prudent course of action for achieving Project goals while considering potential benefits, risks, and cost implications are presented in Section 4.1. Subsection 4.1.1 includes management techniques advised for Elbow BU and Subsection 4.1.2 includes management techniques advised for delta marshes. Other adaptive management techniques that may be considered in the future are summarized in Subsection 4.2 While techniques presented in Section 4.2 are not recommended at this time, they may become necessary should future monitoring determine that Project goals are unlikely to be achieved without more intrusive human intervention.

4.1 Recommended Adaptive Management

As described throughout previous report sections, each placement area is subject to unique circumstances. Specifically, Elbow BU's geomorphic position in relation to Nueces Bay differs from geomorphic conditions at BWM-2, BU Delta 3, and BU Delta 4. Similarly, the overall extent and time elapsed since construction activities within Elbow BU differ from delta marshes. Accordingly, adaptive management techniques recommended herein vary slightly between placement areas. The following subsections present the recommended adaptive management techniques for each placement area.

4.1.1 Elbow BU

As stated in Subsection 3.3, construction activities within Elbow BU were completed approximately 17 months prior to the 2025 post-construction monitoring event. While this 17-month rest period included two peak growing seasons, the lack of viable seed load in substantial quantity likely limited vegetation re-establishment, especially within interior portions of the placement area. In considering other similar marsh restoration projects that include the BU of dredged material and thin-layer placement, substantial revegetation often requires one to three growing seasons (roughly 1 to 3 years). However, these timelines are generally associated with restoration projects that include proactive planting activities. Accordingly, timelines for achieving dense marsh vegetation for Elbow BU are expected to be increased without proactive intervention.

Estimated timelines for fully functioning marsh habitat vary widely on a project site to project site basis due to numerous factors. Considering the overall extent of Elbow BU and the relatively limited extent of immediately abutting marsh habitats, establishment of mature marsh habitat is anticipated to take ≥10 years without proactive intervention. Proactive intervention would likely decrease this estimated timeline, but this decrease varies based on the intervention selected. In evaluating similar projects, estimated coverage during early establishment (within 3 years) is approximately 30% with no action and approximately 50% with proactive intervention. Estimated coverage during intermediate establishment (3 to 5 years) is approximately 50% with no action and approximately 75% with proactive intervention. Mature establishment (5 to 10 years) is generally associated with >75% coverage which is targeted by year 10 with no action and year 5 with proactive intervention.

Based on Elbow BU's overall size and relatively limited extent of surround marsh, proactive planting is expected to significantly expedite mature marsh development. Promoting plant establishment, as well as other proactive intervention techniques would also support sediment stabilization and combating erosion of placed material currently exposed to high-energy environmental. Results from the 2025 post-construction monitoring survey suggest that the potential for erosion appears greatest along the bayward boundary of Elbow BU. This placement area boundary is exposed to open waters of Nueces Bay, and no shoreline stabilization measures are in place. Considering the predominant south-southeast wind direction and the wind and wave fetch length of Nueces Bay, this boundary of Elbow BU has the greatest exposure.

While significant new growth or evidence of erosion was not observed, Anchor QEA identified three recommended adaptive management techniques for Elbow BU that are anticipated to promote mature marsh establishment and expedite achievement of Project goals. These techniques include continued marsh monitoring, sediment nutrient testing, and live-root planting. Continued marsh monitoring is anticipated to require modest financial or temporal investment and will allow CBBEP to track Project success and determine appropriate next steps. Based on the anticipated results from continued marsh monitoring, Anchor QEA has identified two additional recommended adaptive

management techniques which include sediment nutrient testing and live-root planting. These techniques are anticipated to require increased financial and temporal investment as compared to monitoring, but they would be recommended should monitoring results suggest that Project goals are not being achieved within CBBEP's desired timeline. Each adaptive management technique currently recommended for Elbow BU is summarized in Subsections 4.1.1.1 through 4.1.1.3.

4.1.1.1 Adaptive Management Technique No. 1: Continued Marsh Monitoring

Anchor QEA recommends that marsh monitoring be conducted on an annual basis until Project goals are met. Continued monitoring is recommended to include similar components to the 2025 post-construction monitoring survey and should include data collection and analysis related to both vegetative composition and coverage and elevations.

The recommended long term performance benchmark for vegetive coverage is 70% coverage within Elbow BU. Establishment of 70% coverage is estimated to take approximately a decade in this placement area considering its overall extent, relative lack of immediately abutting marsh, elevations achieved, and exposure to the erosive energy from Nueces Bay. This percent coverage is the typical performance benchmark used for similar BU marsh restoration projects and generally coincides with sufficiently dense root systems to stabilize substrate, effectively reduce erosion, and to provide critical ecosystem services such as nutrient cycling, water filtration, carbon sequestration, and vital wildlife habitat elements. If continued marsh monitoring suggests that 70% is unlikely to be achieved by year 10 (i.e., low annual increase in coverage), then additional adaptive management techniques are likely necessary.

Further refinement of Project goals is needed to develop a recommended performance benchmark for placement area elevations. Given the limited tidal range in the region (generally 1 to 3 feet), elevations coincide closely with habitat type and vegetation composition (i.e., subtidal marsh, intertidal marsh, and palustrine wetland). If specific habitats are targeted by CBBEP, elevations associated with that habitat can be reasonably determined by surveying adjacent reference habitats. Regardless, if continued monitoring documents a similar erosion to pre-Project conditions (14.8 feet per year), then additional adaptive management is recommended.

4.1.1.2 Adaptive Management Technique No. 2: Sediment Nutrient Testing

If continued monitoring indicates re-establishment of marsh vegetation is not being achieved through natural recruitment, then increasingly proactive intervention may be warranted to achieve Project goals. Should funding be secured or CBBEP be interested in expediting vegetation re-establishment, Anchor QEA identified sediment nutrient testing as a recommended adaptive management technique. This adaptive management technique would likely require increased financial investment by CBBEP or its partners but is likely to provide valuable insight related to performance of Elbow BU.

Anchor QEA recommends that dredged material placed be tested to determine if soil characteristics act as an underlying problem. It is recommended that a sampling program that compares material placed within Nueces Delta to in situ material from adjacent, prolific marsh habitats be developed. The sampling program should be developed based on relevant sampling guidelines, but particular emphasis should be included for pH, salinity, organic matter, nitrogen and phosphorus. Testing related to contaminants (i.e., heavy metals) could also be included should future monitoring results suggest evidence of contamination not addressed as part of development and execution of the Corpus Christi Ship Channel Deepening and Widening Project. Baseline recommendations generally call for one sample location per 0.25 to 1 acre. However, given the anticipated homogenous nature and shared origin or material placed during the Project, this sampling density could likely be reduced substantially to minimize costs. Regardless, sampling plan development will likely determine that multiple samples should be collected within each placement area to ensure that different sediment types are adequately characterized. A sampling plan is also expected to include sample locations within numerous reference habitat types. Figure 8 depicts an example of distribution of sediment sample locations.

Results from sediment nutrient testing would be used to determine appropriate soils amendments for Elbow BU and the timing for their implementation. It is recommended that amendments be selected to address speculative nutrient deficiencies identified within Elbow BU as compared to testing results from adjacent marsh habitat. It is anticipated that use of soil amendments would be concurrent with live-root planting (Section 4.1.1.3). However, CBBEP may elect to implement soil amendments as a standalone adaptive management technique to determine if soil amendments are sufficient in triggering more rapid natural recruitment across Elbow BU. While the appropriate soil amendment would be determined based on material sampling results, preliminary options may include organic matter additions such as compost, nutrient fertilizers particularly those including nitrogen and phosphorus, additives to address pH conditions such as lime or gypsum, or silicon additives to promote nutrient uptake in estuarine restoration. Similarly, biochar may also warrant consideration depending on the results of sediment testing and soil amendment selections.

Currently, biochar's application in coastal marsh restoration is not a widely practiced method. However, continued experimentation may suggest benefits of its use. Based on past use in agricultural land and upland restoration projects, biochar has successfully supported plant establishment by aiding in nutrient retention, microbial community benefits, and benefits to carbon sequestration processes. However, recent experimentation, including ones focused on smooth cordgrass restoration, suggests that these benefits are less founded in coastal marsh restoration. Rather, biochar benefits are most closely related to effects on sediment texture that leads to more oxygenated pore space rather than nutrient retention (Wilburn 2023).

4.1.1.3 Adaptive Management Technique No. 3: Live-Root Planting

Once dredged material located across Elbow BU is adequately characterized, Anchor QEA recommends plans for live-root planting be developed and implemented if Project goals are not being met or CBBEP wishes to expedite mature marsh development. Based on the results of sediment analysis (Adaptive Management Technique 2), it may become necessary to include soil amendments suitable for use in an aquatic environment into the planting plan. Recent guidelines suggest that planting be implemented in the spring (February to March) for optimal root establishment before summer heat. Generally, the most successful marsh planting jobs include 18- to 24-inch spacing (Texas TIG 2025); however, planting spacing may be increased to meet Project goals or cost considerations. Depending on the habitat types and specific species composition targeted by CBBEP, the planting plan should identify lower and upper elevation thresholds to promote the desired habitats. Based on similar restoration projects in the regions, Anchor QEA recommends plants such saltmeadow cordgrass and smooth cordgrass be targeted because existing elevations appear suitable, they are native and currently present throughout the Nueces Delta complex, and there is a demonstrated history of success using these species in the region. Based on the location of Project, it is likely that suitable nursery stock may be obtained from the adjacent Nueces Delta marshes. Obtaining nursery stock from adjacent areas, which could aid in the reduction of planting costs and would produce plants well-adapted for site conditions within the placement areas, can likely be achieved. Figure 8 provides a sample planting plan based on 36-inch plant spacing and identifies preliminary borrow sites that could be evaluated during planting plan development.

If live-root planting were to become cost prohibitive, alternate spacing or seeding may be also considered. Similarly, alternative sources of nursery stock may require consideration if native harvesting from adjacent areas is not feasible. Options to reduce costs associated with this adaptive management technique include evaluating alternative methods for seed introduction such as seeding, modifying target planting areas, or modifying target plant spacing. In lieu of live-root planting, recent projects such as the Galveston Bay Foundation's Pierce Marsh restoration project, suggest that smooth cordgrass seed introduction may be feasible but special consideration is required related to the species' low germination rate, potential for seeds to be washed away, and seeds' vulnerability to herbivory. While plug planting remains the dominant method, seed dispersal may be viable under specific conditions (Webb 1984).

If CBBEP elects to modify target planting areas (i.e., plant only a portion of Elbow BU), it is recommended that planting plan development emphasizes high priority areas, areas with the greatest exposure to the erosive area, and areas exhibiting the least evidence of natural marsh vegetation recruitment. For example, the exposed edge of Elbow BU has the greatest exposure to wind and wave action. A planting approach for combating this erosion along this boundary could feasibly include the installation of a 30- to 50-foot-wide band of plants along the entire shoreline. Depending on the elevations in the planting area, installation of temporary wave attenuation devices

immediately offshore may become necessary to protect plants during initial establishment. In addition to planting along the exposed margin of Elbow BU, CBBEP may also consider dispersing smaller, clustered planting plots across the overall extent of Elbow BU. The extent of planting plots (i.e., 1 acre, 5 acres, 10 acres) could be adjusted to meet the available funding. It is recommended that dispersed planting plots be in areas with the lowest evidence of natural recruitment and away from Elbow BU margins located adjacent to existing marsh. Establishment of marsh vegetation within dispersed plots is expected to promote natural recruitment across the entirety of Elbow BU.

Throughout the implementation of Adaptive Management Techniques 1 through 3, Anchor QEA also recommends that consideration be given to invasive species control and other site protection instrument considerations. While 2025 post-construction monitoring results did not identify evidence of invasive species, animal herbivory, human disturbances, or other anthropogenic effects, these potential effects should be considered as future adaptive management is selected and implemented. It is recommended that if invasive or undesirable species (e.g., saltcedar [*Tamarix* spp.], common reed [*Phramites australis*], and Guinea grass [*Megathyrus maximus*]) are identified during future monitoring events, they be addressed quickly before they spread throughout Nueces Delta. Solutions for addressing invasive or undesirable species may include physical removal or chemical eradication. Should human disturbance or animal herbivory be encountered, CBBEP may also need to consider exclusion devices such as deterrent signs, exclusion fences, or acoustic deterrents.

4.1.2 Delta Marsh (BWM-2, BU Delta 3, BU Delta 4)

As stated in Subsection 3.3, construction activities within BWM-2, BU Delta 2, and BU Delta 4 were completed approximately 7 months prior to the 2025 post-construction monitoring event. While this 7-month period occurred during the typical growing season for marsh habitats in this region, the lack of viable seed load in substantial quantity likely limited vegetation re-establishment. In considering other similar marsh restoration projects that include the BU of dredged material and thin-layer placement, substantial revegetation often requires one to three growing seasons (roughly 1 to 3 years). However, these timelines are generally associated with restoration projects that include proactive planting activities. Accordingly, timelines for achieving dense marsh vegetation for the Project are expected to be increased without proactive intervention.

As compared to Elbow BU, the estimated timelines for fully functioning marsh habitat within delta marsh placement areas is slightly decreased due to multiple factors. Each of the delta marsh placement areas are significantly smaller than Elbow BU which reduces the distance marsh vegetation is needed to expand from adjacent marsh. Similarly, each placement area is nearly fully surrounded by existing marsh which provides increased potential for natural vegetative expansion. Further, delta marsh placement areas are situated at lower elevations which appear more comparable to existing marsh habitat. Delta marsh placement areas are also more protected for erosion by wind and wave action due to their position behind the newly constructed breakwater and within the

existing marsh complex. This geomorphic position is expected to provide increased stability of placed sediments which further promotes natural recruitment of marsh vegetation.

Development of mature marsh habitat within delta march placement areas is anticipated to occur slightly quicker than Elbow BU even without proactive intervention. Based on results from the post-construction survey and existing conditions, marsh development is estimated to occur in approximately 8 to 10 years. Proactive intervention would likely decrease this estimate but depends on the intervention selected. In evaluating similar projects, estimated coverage during early establishment (within 3 years) is expected to be similar to Elbow BU (approximately 30% with no action and approximately 50% with proactive intervention). However, coverage is expected to increase quicker within delta marshes during later stages. Estimated coverage during intermediate establishment (3 to 5 years) is approximately 60% with no action and approximately 75% with proactive intervention. Mature establishment (5 to 10 years) is generally associated with >75% coverage which is targeted by year 8 with no action and year 5 with proactive intervention.

While significant new growth was not observed within delta marsh placement areas, Anchor QEA identified three recommended adaptive management techniques for these placement areas that are anticipated to promote mature marsh establishment and expedite achievement of Project goals. These techniques are the same as those identified for Elbow BU and include continued marsh monitoring, sediment nutrient testing, and live-root planting. An abbreviated summary of each adaptive management technique, including light slight variations catering to delta march conditions where appropriate, is included in Subsections 4.1.2.1 through 4.1.2.3.

4.1.2.1 Adaptive Management Technique No. 1: Continued Marsh Monitoring

Anchor QEA recommends that marsh monitoring be conducted on an annual basis until Project goals are met. As stated in Section 4.1.1.1, continued monitoring is recommended to include similar components to the 2025 post-construction monitoring survey and should include data collection and analysis related to both vegetative composition and coverage and elevations.

Similar to Elbow BU, the recommended performance benchmark for vegetive coverage is 70% coverage within delta marsh placement areas. Establishment of 70% coverage is estimated to take less than a decade in these placement areas considering their overall extent, increased presence immediately abutting marsh, elevations achieved, and protection from erosive energy from Nueces Bay.

As stated in Section 4.1.1.1, further refinement of Project goals is needed to develop a recommended performance benchmark for placement area elevations. However, if continued monitoring documents a similar erosion to pre-Project conditions (14.8 feet per year), then additional adaptive management is recommended.

4.1.2.2 Adaptive Management Technique No. 2: Sediment Nutrient Testing

As stated in Section 4.1.1.2, if continued monitoring indicates re-establishment of marsh vegetation is not being achieved through natural recruitment, then increasingly proactive intervention may be warranted to achieve Project goals. Should funding be secured or CBBEP be interested in expediting vegetation re-establishment, Anchor QEA recommends that a sediment testing plan similar to the one described for Elbow BU also be implemented for delta marsh placement areas. Results from sediment nutrient testing would be used to determine appropriate soils amendments for delta marsh placement areas. It is anticipated that testing results will reveal similar sediment characteristics as those within Elbow BU considering the shared origin of material placed. However, testing of sediment with marsh delta placement areas would confirm that specific placement areas do not exhibit unique sediment characteristics that result in limited marsh vegetation establishment.

4.1.2.3 Adaptive Management Technique No. 3: Live-Root Planting

As stated in Section 4.1.1.3, once dredged material located across marsh delta placement areas is adequately characterized, Anchor QEA recommends plans for live-root planting be developed and implemented if Project goals are not being met or CBBEP wishes to expedite mature marsh development. A planting plan should consider results of sediment analysis within the specific placement area targeted for planting and include soil amendments appropriate for the specific area. Suggested timing and specifications for planting are consistent with those described in Section 4.1.1.3. If live-root planting were to become cost prohibitive, alternate spacing or seeding may also be considered for marsh delta placement areas. It is recommended that the planting plan emphasizes high priority areas if planting of the entire extent of these placement areas is not feasible. High priority areas within delta marsh areas primarily include portions directly abutting breakwater gaps and areas exhibiting the least evidence of natural marsh vegetation recruitment.

4.2 Other Adaptive Management Considerations

The 2025 post-construction monitoring survey did not reveal substantial evidence that Project goals will not be achieved over time. However, implementation of Adaptive Management Techniques 1 through 3 are anticipated to expedite Project success or at minimum provide valuable insight to inform future adaptive management practices. While Project goals are anticipated to be met, further refinement of these goals or unforeseen anthropogenic effects on a placement area(s) may require the consideration of additional adaptive management techniques not recommended at this time. Generally, these additional adaptive management techniques are more intrusive in nature and often come with increased temporal and financial investment or have accompanying risks. An abbreviated summary of alternative adaptive management techniques and an example of when they may be appropriate are in the following subsections.

4.2.1 Supplemental Grading and Earthwork

As stated in Section 4.1, the size of each placement area and limited potential for anemochory, zoochory, and hydrochory, especially at interior portions of placement areas, may result in extended marsh re-establishment timelines. While additional earthwork (i.e., sculping, grading, circulation channel construction) may promote natural recruitment, it is Anchor QEA's best professional judgment that such an approach would be less beneficial than other recommended techniques. However, if further refinement of Project goals establishes more specific habitat types (i.e., subtidal smooth cordgrass beds), then elevations may require further manipulated to create elevations suitable for the targeted habitats. Given the smaller tidal fluctuation experienced along the Texas Gulf Coast and within back bay systems like the headwaters of Nueces Bay, habitat types are driven significantly by slight variations in elevation. Decreasing or increasing the existing grade of BU material by as little as 6 inches can often shift vegetation composition dramatically. For example, Elbow BU's average elevation is +3.03 feet NAVD88. If CBBEP ultimately targets smooth cordgrass beds for this placement area, scraping down high elevations would likely be needed as existing elevations are likely higher than those associated with existing smooth cordgrass beds in the Project area. Surveying reference habitats would provide valuable insight into target elevations should supplemental grading or earthwork be considered in the future.

4.2.2 Sediment Fluffing or Aerating

If, over time, vegetation fails to establish within placement areas, sediment analysis fails to identify a reason why material is not suitable for supporting marsh vegetation, or proactive planting fails to survive, compaction of BU material may warrant evaluation. While material was placed hydraulically, placement areas experienced heavy loads associated with dredge discharge pipe manipulation and grading operations that occurred after placement. Construction activities may have resulted in compaction at the material's surface that prevents root system establishment. If compaction restricts Project success, fluffing or aerating of BU sediments may promote re-establishment of marsh vegetation.

4.2.3 Elbow BU Protection

As stated in Subsection 4.1.1, Elbow BU appears subject to the greatest exposure to potentially high-energy erosion. BWM-2, Delta BU 3, and Delta B4 are landward of the constructed breakwater system or within enclosed pockets of the existing Nueces Delta marsh complex. Elbow BU is situated immediately adjacent to Nueces Bay with no containment measures in place. Conditions of Elbow BU present the potential for BU material to be washed about by the ebb and flow of regular tide or during high-energy, high-water events. While it is anticipated that revegetation of the bayward margin of this placement area will stabilize the placement area, erosion could occur before such time. If it becomes apparent the Elbow BU is being lost to erosion, then implementing protection or

containment measures, such as an offshore breakwater or riprap placement along the bayward boundary of the placement area, may warrant consideration.

Alternative approaches for Elbow BU protection could also be considered. As detailed in Section 4.1.1.3, planting of the bayward margin of Elbow BU may be considered to promote establishment of mature marsh. Planting this area would also aid in stabilizing sediments exposed to erosive energy. During early establishment, this vegetation would likely need to be protected from wind and wave action by a temporary wave attenuation device but it could feasibly be removed once vegetation fully establishes. Similarly, implementation of other living shoreline concepts such as shoreline oyster shell placement or construction of offshore oyster reefs could also provide protection from wind and wave action.

4.2.4 Circulation Channel Design and Construction

If future monitoring results indicate placement areas are experiencing water flow restrictions or if specific subtidal or intertidal marsh habitats are targeted in refined Project goals, it may be necessary to design and construct water circulation channels. Construction of circulation channels does not appear to be a significant mechanism for introducing seed load to the placement areas but doing so would positively influence tidal flushing required for specific habitat types. Construction of circulation channels may also be needed if placement areas remain flooded for too long after high-water events, freshwater inflows become backed up due to BU material placement, sediments from freshwater inflows are unable to reach the placement areas, sediment trapping is unable to keep pace with sea level rise over an extended period, or there is significant vegetation die off tied to reduced water quality (i.e., low dissolved oxygen and root rot).

4.2.5 Predator Introduction or Encouragement

If future monitoring reveals significant herbivory that threatens vegetation survival or substantial establishment of problematic wildlife that threatens ecological balance within the placement area, predator introduction or encouragement may warrant consideration. This adaptive management technique is generally less preferred, especially for Texas Gulf Coast marsh restoration projects, but could become necessary under unforeseen circumstances. Possible threats to the Project include feral hogs, nutria, various waterfowls, or insects such as grasshoppers and caterpillars. Predator introduction to address feral hog threats are unfounded. However, predator introduction for other potential threats could warrant consideration. While the effectiveness of predator introduction for nutria or insect threats varies and have accompanying risks, species such as alligators, coyotes, raptors, or insect predators such as dragonflies, beetles or specific birds, may be considered. Predator introduction for waterfowl overgrazing is not appropriate, as waterfowl are native migratory species protected under federal law. It is important to note that this adaptive management technique

must be thoroughly analyzed before implementation to avoid unintended consequences, to ensure ecosystem balance, and to confirm regulatory compliance.

5 Conclusion

On behalf of CBBEP, this concludes Anchor QEA's *2025 Post-Construction Monitoring Report*. As detailed in Section 2, the survey was conducted between September 5, 2025, and October 9, 2025, approximately 7 months following the completion of dredged material placement. During the survey, a total of 182.4 acres were surveyed, and data collected included 1,658 topographic survey points, 141 marsh vegetation quadrat locations, and 1,464 UAS aerial photographs. Analysis of survey results suggest that topography across all four placement areas appears relatively stable. Re-establishment of marsh vegetation was almost entirely absent, but this is most likely attributed to the limited time elapsed between material placement and the monitoring event and the lack of proactive vegetation restoration activities. Where new growth was observed within the placement areas, it was generally along placement area margins that immediately abut existing marsh habitat or those regularly influenced by the regular ebb and flow of tide. Accordingly, re-establishment of marsh vegetation is likely resulting from the natural encroachment from existing marsh or hydrochory.

Analysis of survey results suggest Project goals are anticipated to be met over time. However, without proactive intervention, full establishment of marsh habitat with the placement areas will not likely be achieved quickly (<3 years). To expedite Project success, Anchor QEA identified three preliminarily recommended adaptive management techniques for both the Elbow BU and delta marshes for CBBEP and its partners. It is recommended that marsh monitoring be continued to track long-term trends and overall metrics related to topographic stability and the re-establishment of marsh vegetation. It is also recommended that, should expediting marsh establishment be desired, sediment analysis and live-root planting be implemented across the placement areas. Alternatively, if live-root planting becomes cost prohibitive, seeding or other means of vegetation introduction may be considered. While not recommended at this time, Anchor QEA identified five additional adaptive management techniques that may warrant consideration in the future. These include supplemental grading and earthwork, sediment fluffing or aerating, Elbow BU protection, circulation channel design and construction, and predator introduction or encouragement.

6 References

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Figures

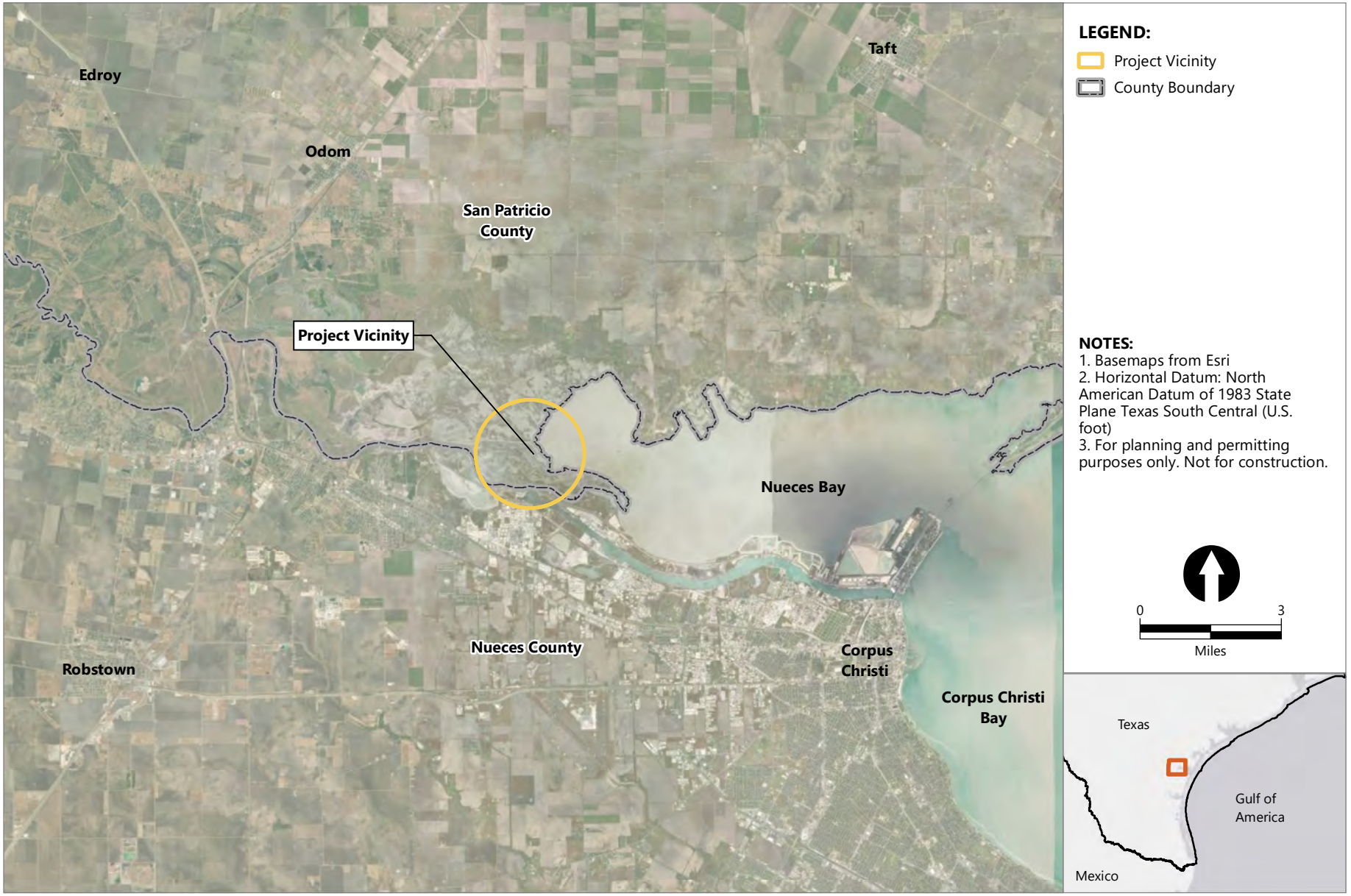

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Figure 1
Vicinity Map

2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Dredged Material Placement Area
- × Topographic Monitoring Points
- --- Topographic Monitoring Transect

NOTES:

1. Basemap from Esri
2. Horizontal Datum: North American Datum of 1983 State Plane Texas South (U.S. foot)
3. Transect and observation point locations are subject to change based on site conditions.

BU: beneficial use
BWM: breakwater marsh

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Feet

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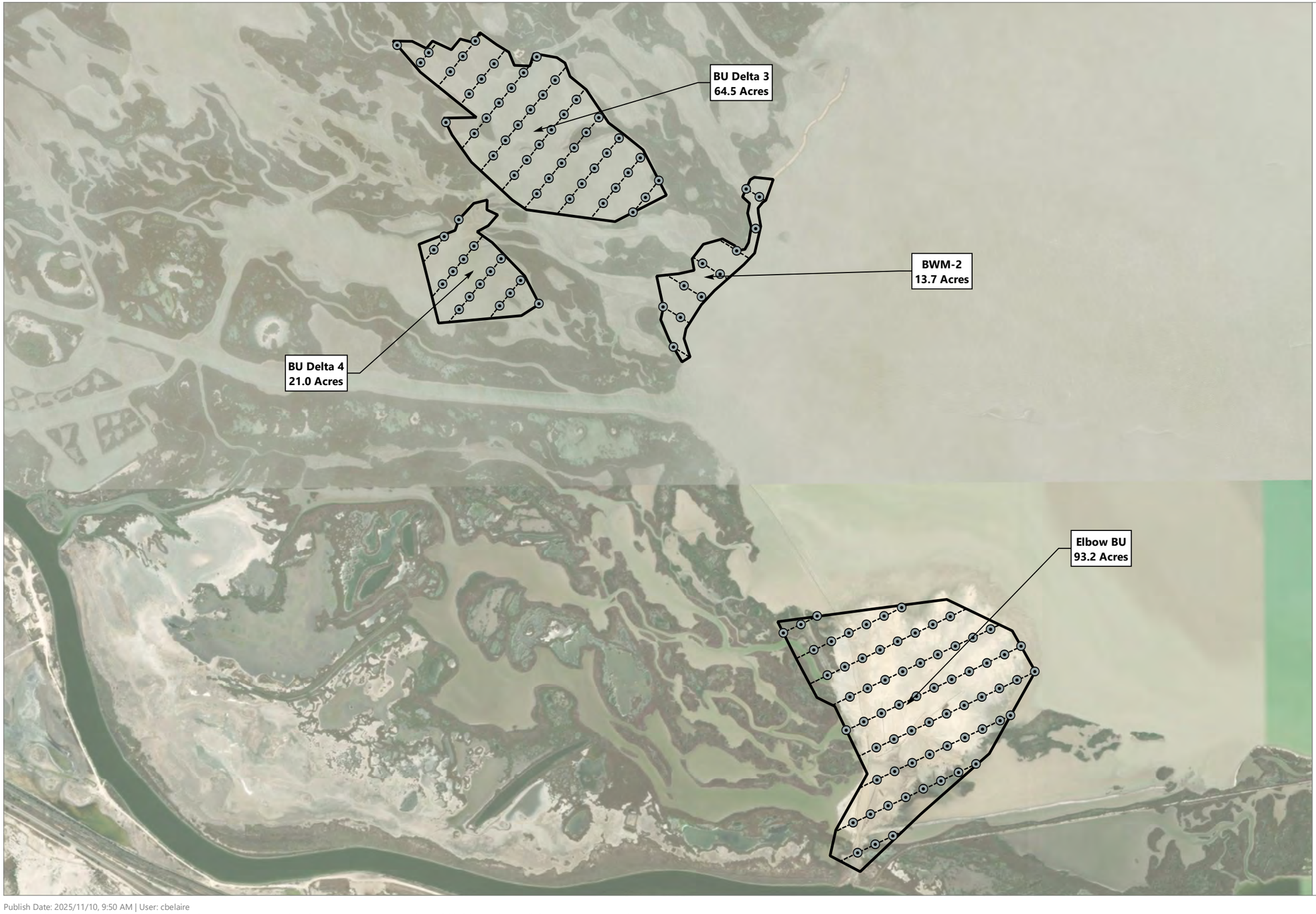
Figure 2
Preliminary Topographic Monitoring Plan
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Dredged Material Placement Area
- Topographic Monitoring Transect
- Marsh Vegetation Quadrat Location

NOTES:

1. Basemap from Esri
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Transect and observation point locations are subject to change based on site conditions.

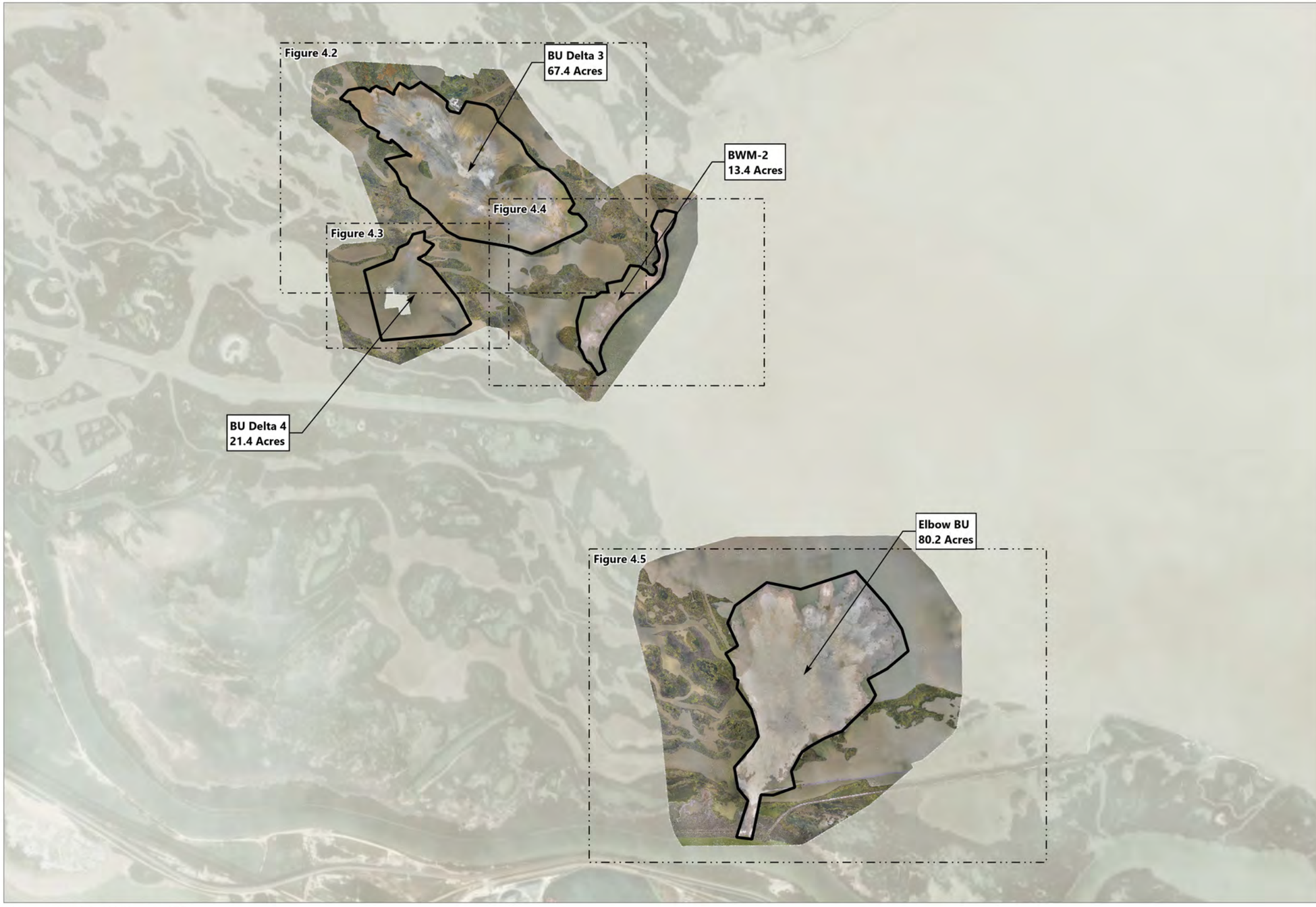
BU: beneficial use
BWM: breakwater marsh

0 0.2
Miles

Publish Date: 2025/11/10, 9:50 AM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\Maps\PostConstructionMonitoringReport\CBBEP-NuecesDelta_fig3_PrelimMarshMonitoringPlan.mxd

ANCHOR QEA

Figure 3
Preliminary Marsh Vegetation Monitoring Plan
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Page Extent

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 2,300
Feet

Publish Date: 2026/02/04, 2:20 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig4i_UASAerialOverviewMap

ANCHOR QEA

Figure 4.1
UAS Aerial Overview Map (Index)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

Final Dredged Material Placement Area

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 660
Feet

Publish Date: 2026/02/04, 2:23 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig4_UASAerialOverviewMap

ANCHOR QEA

Figure 4.2
UAS Aerial Overview Map (BU Delta 3)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

Final Dredged Material Placement Area

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 330
Feet

Publish Date: 2026/02/04, 2:23 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig4_UASAerialOverviewMap

ANCHOR QEA

Figure 4.3
UAS Aerial Overview Map (BU Delta 4)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

Final Dredged Material Placement Area

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 500
Feet

Publish Date: 2026/02/04, 2:23 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig4_UASAerialOverviewMap

ANCHOR QEA

Figure 4.4
UAS Aerial Overview Map (BWM-2)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

Final Dredged Material Placement Area

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 825
Feet

Publish Date: 2026/02/04, 2:23 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig4_UASAerialOverviewMap

ANCHOR QEA

Figure 4.5
UAS Aerial Overview Map (Elbow BU)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Page Extent
- Topographic Survey Transect
- × Topographic Observation Point

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

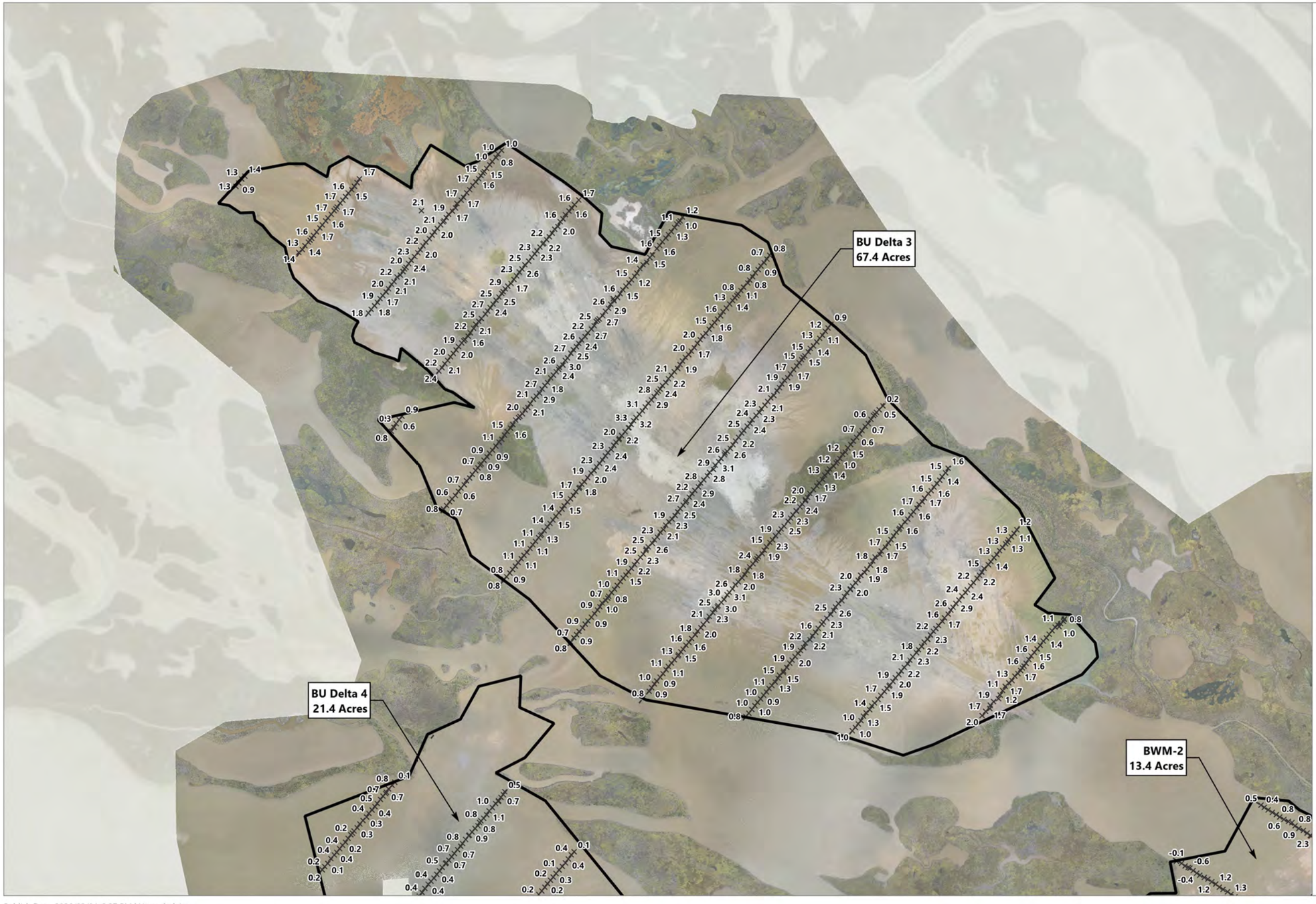
BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 2,300
Feet

Publish Date: 2026/02/04, 2:24 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig5i_TopoSurveyResultsMap

ANCHOR QEA

Figure 5.1
Topographic Survey Results Map (Index)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- × Topographic Observation Point

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Topographic observation point labels are elevation in feet.
5. Various elevation labels were removed to improve legibility.
6. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 660
Feet

Publish Date: 2026/02/04, 2:27 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig5_TopoSurveyResultsMap

ANCHOR QEA

Figure 5.2
Topographic Survey Results Map (BU Delta 3)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- × Topographic Observation Point

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Topographic observation point labels are elevation in feet.
5. Various elevation labels were removed to improve legibility.
6. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 330
Feet

Publish Date: 2026/02/04, 2:27 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig5_TopoSurveyResultsMap

ANCHOR QEA

Figure 5.3
Topographic Survey Results Map (BU Delta 4)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- × Topographic Observation Point

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Topographic observation point labels are elevation in feet.
5. Various elevation labels were removed to improve legibility.
6. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 500
Feet

Publish Date: 2026/02/04, 2:27 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig5_TopoSurveyResultsMap

ANCHOR QEA

Figure 5.4
Topographic Survey Results Map (BWM-2)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- Topographic Observation Point

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Topographic observation point labels are elevation in feet.
5. Various elevation labels were removed to improve legibility.
6. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 825
Feet

Publish Date: 2026/02/04, 2:27 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig5_TopoSurveyResultsMap

ANCHOR QEA

Figure 5.5
Topographic Survey Results Map (Elbow BU)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Page Extent
- Topographic Survey Transect

Elevation Difference from Nearest USACE Survey Point (feet)

- -2.27 - -1 (Net Erosion)
- -0.99 - -0.25
- -0.24 - 0.25 (Minimal Change)
- 0.26 - 1
- 1.01 - 1.66 (Net Deposition)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Elevation labels display change in elevation between the Anchor QEA survey and nearest USACE survey point. Various labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

UAS: unmanned aerial system
USACE: U.S. Army Corps of Engineers

0 2,300
Feet

Publish Date: 2026/02/04, 2:28 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig6i_TopoComparison

ANCHOR QEA

Figure 6.1
Placement Area Topographic Comparison Map (Index)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- USACE As-Built Survey Point

Elevation Difference from Nearest USACE Survey Point (feet)

- -2.27 - -1 (Net Erosion)
- -0.99 - -0.25
- -0.24 - 0.25 (Minimal Change)
- 0.26 - 1
- 1.01 - 1.66 (Net Deposition)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Elevation labels display change in elevation between the Anchor QEA survey and nearest USACE survey point. Various labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

UAS: unmanned aerial system
USACE: U.S. Army Corps of Engineers

0 660
Feet

Publish Date: 2026/02/04, 3:02 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig6_TopoComparison

ANCHOR QEA

Figure 6.2
Placement Area Topographic Comparison Map (BU Delta 3)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

Publish Date: 2026/02/04, 3:02 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig6_TopoComparison

ANCHOR QEA

Figure 6.3
Placement Area Topographic Comparison Map (BU Delta 4)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- USACE As-Built Survey Point

Elevation Difference from Nearest USACE Survey Point (feet)

- -2.27 - -1 (Net Erosion)
- -0.99 - -0.25
- -0.24 - 0.25 (Minimal Change)
- 0.26 - 1
- 1.01 - 1.66 (Net Deposition)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Elevation labels display change in elevation between the Anchor QEA survey and nearest USACE survey point. Various labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

UAS: unmanned aerial system
USACE: U.S. Army Corps of Engineers

0 500
Feet

Publish Date: 2026/02/04, 3:02 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig6_TopoComparison

ANCHOR QEA

Figure 6.4
Placement Area Topographic Comparison Map (BWM-2)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- USACE As-Built Survey Point

Elevation Difference from Nearest USACE Survey Point (feet)

- -2.27 - -1 (Net Erosion)
- -0.99 - -0.25
- -0.24 - 0.25 (Minimal Change)
- 0.26 - 1
- 1.01 - 1.66 (Net Deposition)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Elevation labels display change in elevation between the Anchor QEA survey and nearest USACE survey point. Various labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

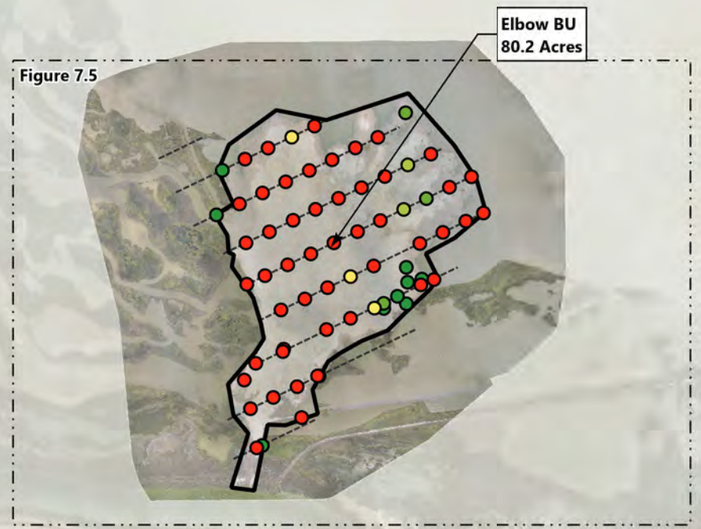
UAS: unmanned aerial system
USACE: U.S. Army Corps of Engineers

0 825
Feet

Publish Date: 2026/02/04, 3:02 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig6_TopoComparison

ANCHOR QEA

Figure 6.5
Placement Area Topographic Comparison Map (Elbow BU)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Page Extent
- Topographic Survey Transect

Quadrat Total Percent Coverage

- 0% Total Coverage (121)
- 0.1 - 10.0% Total Coverage (0)
- 10.1 - 30.0% Total Coverage (0)
- 30.1 - 50.0% Total Coverage (3)
- 50.1 - 70.0% Total Coverage (2)
- 70.1 - 90.0% Total Coverage (3)
- 90.1 - 100.0% Total Coverage (12)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

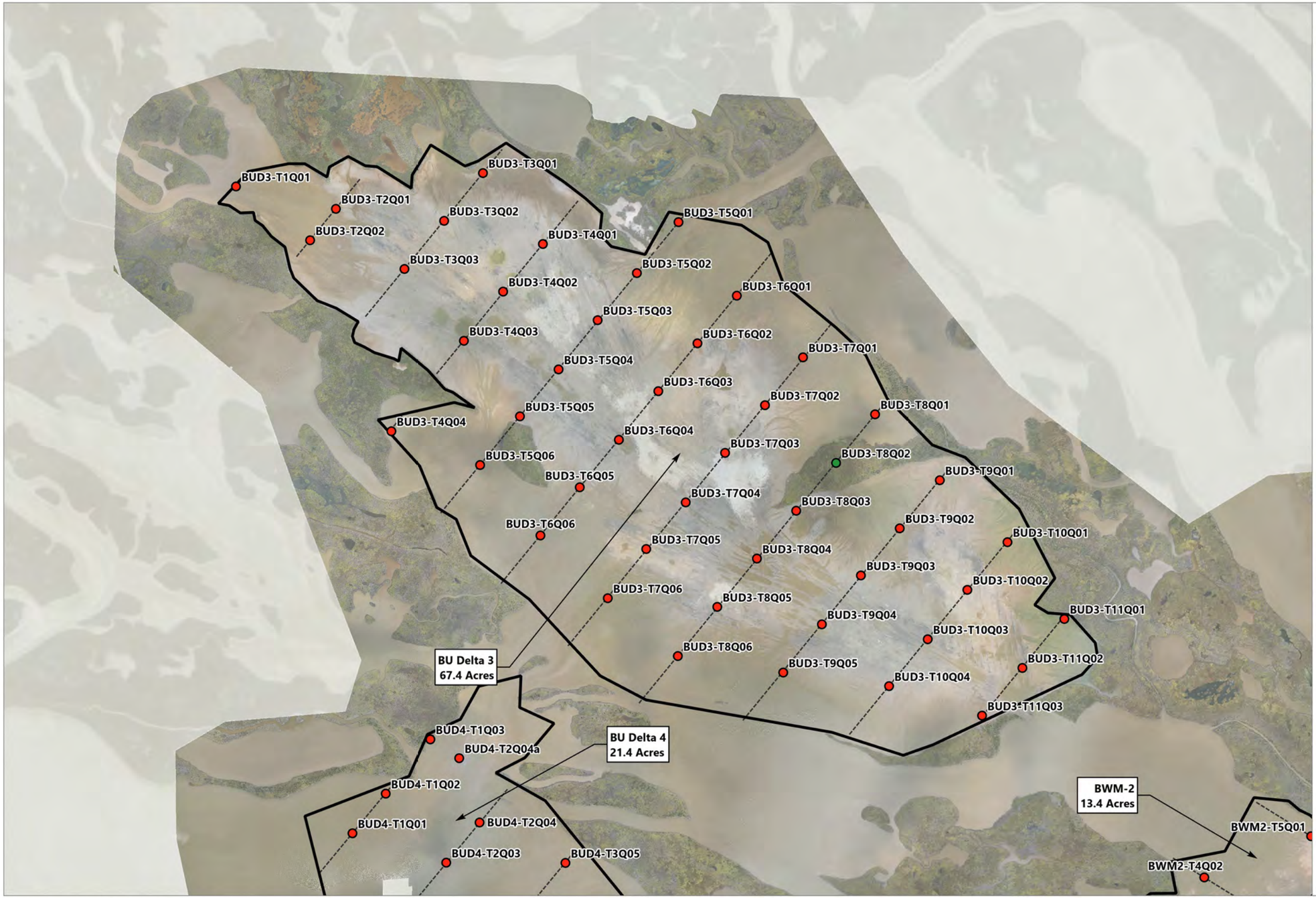
BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 2,300
Feet

Publish Date: 2026/02/04, 3:06 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig7i_MarshVegetationSurveyResultsMap

ANCHOR QEA

Figure 7.1
Marsh Vegetation Survey Results Map (Index)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- Partially Revegetated Areas

Quadrat Total Percent Coverage

- 0% Total Coverage (54)
- 0.1 - 10.0% Total Coverage (0)
- 10.1 - 30.0% Total Coverage (0)
- 30.1 - 50.0% Total Coverage (0)
- 50.1 - 70.0% Total Coverage (0)
- 70.1 - 90.0% Total Coverage (1)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

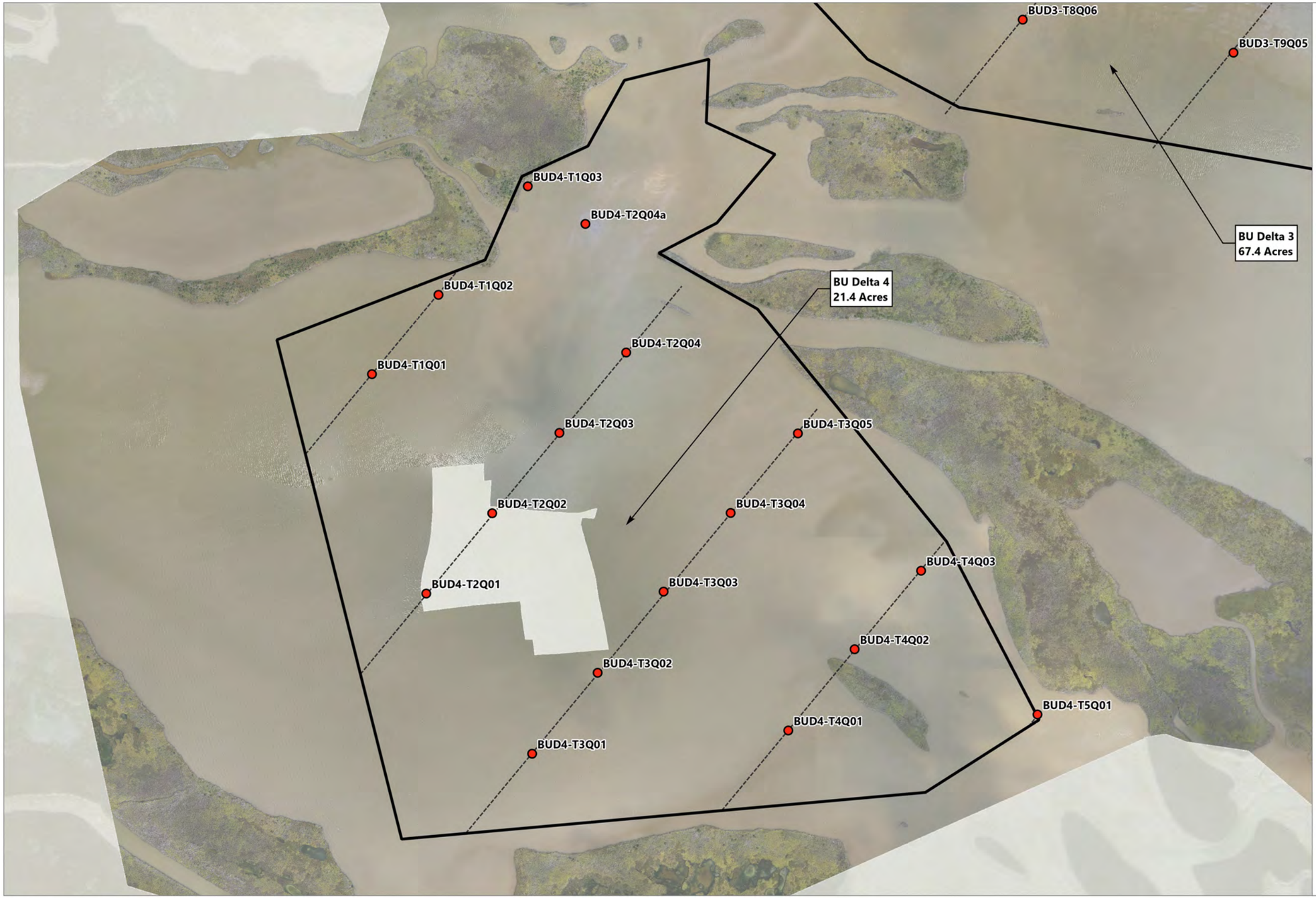
BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 660
Feet

Publish Date: 2026/02/04, 3:08 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig7_MarshVegetationSurveyResultsMap

ANCHOR QEA

Figure 7.2
Marsh Vegetation Survey Results Map (BU Delta 3)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- Partially Revegetated Areas

Quadrat Total Percent Coverage

- 0% Total Coverage (19)
- 0.1 - 10.0% Total Coverage (0)
- 10.1 - 30.0% Total Coverage (0)
- 30.1 - 50.0% Total Coverage (0)
- 50.1 - 70.0% Total Coverage (0)
- 70.1 - 90.0% Total Coverage (0)
- 90.1 - 100.0% Total Coverage (0)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 330
Feet

Publish Date: 2026/02/04, 3:08 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig7_MarshVegetationSurveyResultsMap

ANCHOR QEA

Figure 7.3
Marsh Vegetation Survey Results Map (BU Delta 4)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- Partially Revegetated Areas

Quadrat Total Percent Coverage

- 0% Total Coverage (20)
- 0.1 - 10.0% Total Coverage (0)
- 10.1 - 30.0% Total Coverage (0)
- 30.1 - 50.0% Total Coverage (0)
- 50.1 - 70.0% Total Coverage (0)
- 70.1 - 90.0% Total Coverage (0)
- 90.1 - 100.0% Total Coverage (1)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

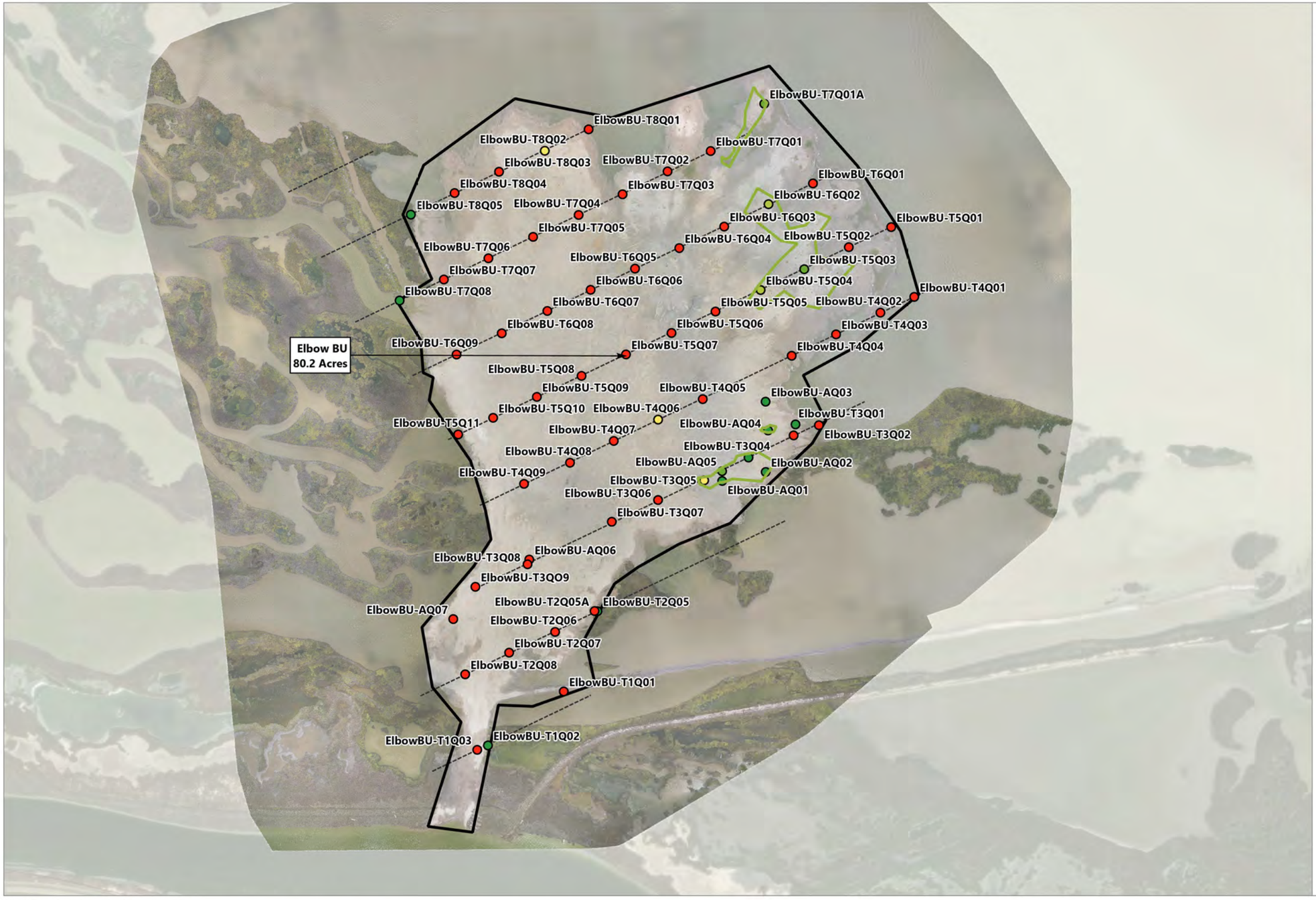
BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 500
Feet

Publish Date: 2026/02/04, 3:08 PM | User: cbelaire
Filepath: \\GSTFile01\GIS\Jobs\CBBEP_0737\NuecesDeltaMarshMonitoring\CBBEP_NuecesDelta.aprx | CBBEP-NuecesDelta_fig7_MarshVegetationSurveyResultsMap

ANCHOR QEA

Figure 7.4
Marsh Vegetation Survey Results Map (BWM-2)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)



LEGEND:

- Final Dredged Material Placement Area
- Topographic Survey Transect
- Partially Revegetated Areas

Quadrat Total Percent Coverage

- 0% Total Coverage (49)
- 0.1 - 10.0% Total Coverage (0)
- 10.1 - 30.0% Total Coverage (0)
- 30.1 - 50.0% Total Coverage (3)
- 50.1 - 70.0% Total Coverage (2)
- 70.1 - 90.0% Total Coverage (3)
- 90.1 - 100.0% Total Coverage (10)

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Vertical Datum: North American Vertical Datum of 1988 (U.S. foot)
4. Various elevation labels were removed to improve legibility.
5. Portions of UAS imagery was removed from the orthomosaic due to reduced resolution.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 825
Feet

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ANCHOR QEA

Figure 7.5
Marsh Vegetation Survey Results Map (Elbow BU)
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

LEGEND:

- Final Dredged Material Placement Area
- Preliminary Planting or Seeding Area
- Preliminary Marsh Plant Source Area
- Preliminary Sediment Sample Location

NOTES:

1. Basemaps: UAS imagery recorded by Anchor QEA on October 9, 2025; aerial imagery is from Esri.
2. Horizontal Datum: North American Datum of 1983 State Plane South (U.S. foot)
3. Portions of UAS imagery were removed from the orthomosaic due to reduced resolution.
4. The horizontal extent of preliminary planting or seeding area excludes areas where there is limited evidence of material placement and where elevations appear lower than those expected to support emergent vegetation.
5. The approximate number of planting units for each preliminary planting or seeding area assumes 36-inch spacing.
6. The preliminary sediment sample locations are randomly established to provide relatively uniform distribution within preliminary planting areas. Sediment sample locations located outside of preliminary planting or seeding areas are intended to represent reference habitats and areas were marsh plant materials may be collected.
7. Ownership associated with preliminary marsh plant source areas was not considered. These areas are identified because it is anticipated that they contain species suitable to support planting initiatives.

BU: beneficial use
BWM: breakwater marsh
UAS: unmanned aerial system

0 2,300
Feet

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Figure 8
Sample Adaptive Management Plan
2025 Post-Construction Monitoring Report
Monitoring Success of Dredged Material Placement in the Nueces Delta (CBBEP Project No. 2404)

Appendix A
Tabular Topographic Survey Data

Table A-1
BWM-2 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17203566.2	1300580.6	2.11	0.67
17203574.4	1300568.4	2.17	0.73
17203558.9	1300593.6	1.64	1.22
17203548.5	1300607.2	1.34	0.92
17203541.1	1300619.3	0.93	1.66
17203532.3	1300633.0	0.65	1.38
17203526.7	1300645.7	0.52	0.88
17203516.6	1300658.7	0.32	0.97
17203510.7	1300670.4	0.20	0.85
17203501.9	1300682.5	-0.08	0.58
17203494.2	1300694.9	-0.32	0.67
17203488.3	1300708.1	-0.04	0.96
17203479.0	1300721.1	0.11	-0.21
17203472.1	1300734.6	0.10	-0.23
17203826.3	1300727.7	1.92	0.46
17203837.7	1300711.3	1.83	-0.11
17203843.5	1300702.9	2.02	0.08
17203850.9	1300690.4	2.15	0.21
17203858.7	1300675.3	2.17	0.57
17203868.3	1300663.4	2.20	0.60
17203876.9	1300651.0	1.87	-0.24
17203881.8	1300641.9	2.96	0.85
17203882.1	1300638.4	2.95	0.84
17203892.1	1300625.1	2.54	0.43
17203901.6	1300612.5	2.98	0.66
17203907.2	1300598.4	3.01	0.69
17203916.6	1300584.9	2.43	-0.08
17203922.4	1300573.1	2.36	-0.15
17203929.9	1300561.2	2.04	0.39
17203937.4	1300547.7	1.92	0.59
17203947.3	1300535.1	1.74	0.42
17203954.4	1300524.2	1.62	--
17203963.4	1300510.2	1.74	0.27
17203968.7	1300495.5	1.83	0.36
17203978.2	1300483.7	1.74	0.43
17203985.7	1300471.5	1.20	-0.11
17203992.3	1300461.2	0.44	0.15
17204071.4	1300902.8	1.78	-0.33
17204078.5	1300891.6	1.87	-0.24
17204088.5	1300877.0	1.63	0.23
17204093.5	1300865.4	1.78	0.38
17204099.9	1300855.7	1.80	0.41
17204101.7	1300849.2	1.66	0.26
17204111.1	1300839.8	1.90	0.31

Table A-1
BWM-2 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204116.5	1300828.1	2.02	0.42
17204125.2	1300814.5	2.18	0.16
17204131.7	1300800.6	2.51	0.50
17204140.4	1300790.1	2.67	0.65
17204149.3	1300777.9	2.62	0.67
17204156.7	1300762.6	2.60	0.40
17204162.9	1300749.5	2.54	0.38
17204170.9	1300737.3	2.56	0.40
17204182.4	1300721.3	2.38	0.22
17204192.8	1300712.9	1.84	0.12
17204197.4	1300700.7	2.29	0.56
17204205.0	1300687.5	2.06	0.34
17204211.0	1300677.4	2.07	0.61
17204211.7	1300673.1	1.90	0.45
17204219.3	1300663.5	1.98	0.52
17204226.5	1300651.1	1.81	1.09
17204234.1	1300636.3	1.30	0.58
17204244.2	1300624.2	0.95	0.23
17204250.3	1300610.3	0.82	0.24
17204258.9	1300597.7	0.74	0.33
17204266.9	1300585.2	0.34	-0.25
17204274.4	1300572.0	0.04	-0.56
17204282.5	1300561.1	-0.20	-0.79
17204290.6	1300546.0	-0.30	--
17204298.8	1300534.4	0.05	--
17204307.0	1300520.8	0.19	-0.47
17204315.0	1300509.6	0.21	-0.46
17204284.2	1301122.1	2.36	1.03
17204291.4	1301118.5	1.82	0.49
17204301.4	1301104.2	0.84	-0.01
17204306.9	1301104.1	1.00	0.14
17204306.9	1301092.1	0.88	0.03
17204315.9	1301076.4	0.76	--
17204322.7	1301064.2	1.46	0.35
17204333.1	1301049.4	1.73	0.62
17204340.2	1301036.9	1.63	0.77
17204351.0	1301022.9	1.99	0.83
17204356.2	1301011.6	1.88	0.69
17204364.3	1300998.6	1.83	0.64
17204371.0	1300986.7	1.79	0.60
17204379.2	1300974.1	1.51	0.88
17204387.0	1300960.8	1.31	0.64
17204395.7	1300949.6	0.97	0.30
17204403.6	1300934.6	1.34	0.72

Table A-1
BWM-2 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204410.8	1300922.5	1.41	0.79
17204421.0	1300910.8	1.22	0.74
17204428.7	1300897.8	1.21	0.73
17204437.5	1300885.0	0.17	-0.31
17204443.0	1300873.1	-0.08	-0.01
17204450.1	1300858.3	-0.18	-0.03
17204456.9	1300848.3	-0.37	-0.34
17204465.5	1300836.6	-0.67	-0.63
17204473.7	1300825.8	-0.63	-0.59
17204475.3	1300820.4	-0.06	-0.02
17204480.3	1300809.9	-0.45	-0.62
17204489.4	1300798.4	0.76	0.69
17204496.0	1300781.6	-0.10	-0.18
17204501.5	1301351.9	2.10	0.01
17204509.1	1301337.5	1.70	0.45
17204514.8	1301323.3	1.43	-0.01
17204523.5	1301312.6	2.11	0.67
17204530.5	1301299.8	2.34	0.79
17204538.7	1301288.0	2.11	0.57
17204547.6	1301276.9	2.04	--
17204558.1	1301264.5	2.26	0.18
17204568.1	1301244.2	2.07	-0.02
17204572.6	1301236.3	2.12	0.36
17204578.4	1301224.3	2.29	0.52
17204580.5	1301221.3	2.26	0.49
17204588.8	1301211.0	1.75	0.67
17204597.2	1301198.6	1.29	0.61
17204604.0	1301183.8	0.91	0.23
17204612.5	1301171.4	0.79	0.02
17204623.2	1301161.2	0.94	0.41
17204627.0	1301149.7	0.79	0.26
17204633.6	1301134.6	0.58	0.29
17204641.4	1301121.0	0.77	0.47
17204649.2	1301109.9	0.99	0.94
17204656.6	1301096.9	0.36	0.31
17204664.5	1301082.9	0.50	0.45
17204672.8	1301070.3	0.45	0.51
17204680.5	1301059.3	0.46	0.37
17204705.0	1301388.1	1.95	0.29
17204784.6	1301461.8	2.83	0.87
17204788.3	1301451.0	2.06	0.10
17204799.3	1301436.2	1.45	0.36
17204804.4	1301423.9	1.40	0.31
17204811.4	1301414.3	1.62	0.92

Table A-1
BWM-2 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204821.3	1301399.6	2.31	0.24
17204828.0	1301387.5	2.41	0.35
17205107.3	1301512.7	-0.48	--
17205110.6	1301505.3	-0.37	-1.17
17205118.1	1301489.6	0.60	-0.20
17205127.3	1301475.7	1.16	0.36
17205136.8	1301463.4	1.15	0.46
17205137.4	1301459.2	1.16	0.46
17205142.0	1301452.1	1.17	1.49
17205148.5	1301438.9	0.41	-0.11
17205157.3	1301426.2	0.89	0.37
17205164.6	1301414.6	1.10	0.58
17205172.5	1301403.6	0.56	0.06
17205179.3	1301389.8	0.91	0.42
17205187.7	1301377.0	1.12	0.62
17205198.0	1301362.9	1.49	0.32
17205204.2	1301346.9	1.45	0.32
17205211.7	1301337.2	1.36	0.37
17205220.7	1301320.7	1.11	0.12

Notes:
1. Northing, easting, and elevation were obtained from Anchor QEA's 2025 post-construction monitoring event.
2. Horizontal Datum: NAD83 State Plane South (U.S. foot)
3. Vertical Datum: NAVD88 (U.S. foot)
4. Delta values were determined by subtracting the elevation from the nearest survey point recorded during the as-built survey to each Anchor QEA survey point. Delta values were only determined for Anchor QEA survey points when there was an associated as-built survey point within 20 feet.
--: no as-built survey point identified within 20 feet of the Anchor QEA survey point
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206712.6	1297691.0	1.29	0.42
17206723.7	1297700.1	0.94	-0.18
17206736.9	1297710.0	1.33	-0.15
17206746.4	1297720.1	1.40	0.23
17206495.8	1297897.2	1.42	-0.33
17206505.2	1297909.3	1.35	-0.15
17206518.2	1297917.5	1.35	-0.38
17206529.5	1297928.9	1.32	-0.14
17206535.9	1297934.5	1.47	-0.25
17206542.3	1297939.4	1.57	-0.18
17206551.6	1297945.8	1.51	-0.36
17206563.3	1297955.8	1.66	-0.16
17206576.3	1297966.4	1.71	0.10
17206586.3	1297974.5	1.54	-0.12
17206599.2	1297985.7	1.42	-0.32
17206609.2	1297992.9	1.64	-0.11
17206621.1	1298003.9	1.73	-0.34
17206632.9	1298013.8	1.74	-0.06
17206639.1	1298019.3	1.76	-0.04
17206644.9	1298023.9	1.73	-0.18
17206658.1	1298033.1	1.68	-0.54
17206667.4	1298042.2	1.81	-0.27
17206679.1	1298051.3	1.76	-0.17
17206690.9	1298059.8	1.64	-0.03
17206701.5	1298071.3	1.48	-0.23
17206713.4	1298080.1	1.54	-0.19
17206725.1	1298089.0	1.66	-0.26
17206737.4	1298096.7	1.67	-0.27
17206633.0	1298300.4	2.13	0.10
17206831.0	1298563.8	0.99	--
17206819.4	1298551.9	0.96	--
17206807.2	1298545.7	0.79	--
17206794.5	1298533.0	1.00	-0.55
17206783.8	1298524.6	1.34	-0.21
17206772.0	1298514.6	1.47	0.05
17206761.5	1298507.4	1.60	-0.04
17206756.6	1298502.7	1.73	0.02
17206748.5	1298496.1	1.53	0.02
17206738.1	1298488.5	1.58	-0.25
17206727.2	1298479.6	1.56	-0.01
17206716.2	1298469.1	1.65	0.20
17206702.0	1298459.0	1.53	-0.18
17206691.5	1298449.1	1.65	-0.08

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206676.8	1298438.8	1.67	0.00
17206667.6	1298431.1	1.72	-0.06
17206656.8	1298417.0	1.57	-0.06
17206642.1	1298412.5	1.71	-0.05
17206631.3	1298402.4	1.73	-0.13
17206621.0	1298389.7	1.87	0.19
17206610.0	1298381.8	2.03	0.01
17206599.6	1298374.9	2.07	0.06
17206596.1	1298371.5	2.07	0.06
17206586.6	1298363.4	2.08	0.14
17206574.8	1298352.1	1.97	-0.10
17206563.1	1298343.1	2.02	-0.29
17206552.5	1298335.7	2.01	-0.02
17206541.1	1298326.3	2.15	-0.35
17206529.6	1298314.9	2.04	-0.25
17206517.6	1298305.5	2.17	-0.23
17206504.5	1298296.6	2.02	-0.67
17206494.7	1298288.5	2.33	-0.58
17206482.4	1298277.5	2.26	-0.37
17206470.1	1298266.8	2.93	0.50
17206459.3	1298258.5	2.38	0.11
17206447.1	1298249.8	2.05	-0.08
17206441.6	1298244.6	2.08	-0.05
17206432.8	1298240.0	2.01	-0.31
17206421.6	1298231.1	2.14	-0.16
17206415.2	1298220.0	2.21	-0.09
17206399.7	1298210.3	2.15	-0.19
17206391.1	1298202.0	2.12	-0.29
17206376.5	1298192.1	2.03	-0.36
17206365.9	1298184.6	1.86	-0.15
17206354.2	1298173.7	1.68	-0.23
17206344.3	1298164.2	1.91	-0.23
17206331.6	1298155.6	1.87	-0.39
17206320.4	1298146.6	1.83	-0.27
17206308.9	1298135.2	1.86	-0.21
17206296.7	1298126.2	1.81	-0.23
17206106.3	1298357.5	2.38	0.38
17205957.6	1298236.6	0.87	0.25
17205946.1	1298227.6	0.58	0.02
17205933.5	1298217.3	0.32	-0.15
17205921.4	1298210.3	0.82	0.30
17205908.5	1298201.7	0.79	0.33
17206117.1	1298368.1	2.17	0.26

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206130.2	1298377.2	2.10	0.04
17206141.0	1298386.7	1.94	0.06
17206153.1	1298395.7	1.96	0.30
17206163.9	1298405.4	1.97	-0.16
17206175.3	1298414.3	1.98	0.08
17206186.5	1298422.5	1.94	0.01
17206198.2	1298433.2	2.02	0.16
17206205.6	1298439.9	2.13	0.48
17206209.4	1298443.6	1.94	0.27
17206220.5	1298454.3	1.65	-0.68
17206231.7	1298461.3	2.21	0.23
17206246.6	1298471.7	1.87	0.04
17206259.9	1298478.9	2.10	0.27
17206269.5	1298488.6	2.48	0.34
17206279.1	1298497.0	2.40	-0.05
17206293.9	1298510.7	2.34	0.06
17206303.4	1298517.8	2.71	-0.19
17206314.4	1298526.1	2.38	-0.05
17206326.1	1298535.6	2.22	-0.19
17206339.1	1298545.5	2.47	-0.04
17206349.3	1298554.9	2.51	-0.06
17206361.0	1298564.5	2.45	-0.28
17206367.2	1298568.8	2.57	-0.16
17206376.2	1298575.6	2.95	0.15
17206385.0	1298584.1	2.23	0.02
17206393.8	1298594.9	1.70	-0.13
17206407.1	1298604.4	1.65	-0.03
17206418.6	1298613.2	2.26	-0.05
17206431.4	1298622.0	2.48	-0.06
17206441.7	1298630.5	2.64	0.19
17206455.5	1298640.3	2.53	-0.18
17206467.0	1298653.1	2.52	-0.11
17206480.4	1298662.8	2.44	0.08
17206491.2	1298672.7	2.34	0.06
17206500.6	1298680.1	2.29	-0.02
17206513.6	1298689.8	2.31	0.05
17206523.6	1298699.5	2.09	0.07
17206526.5	1298702.3	2.18	0.04
17206537.3	1298712.2	2.16	0.06
17206547.3	1298720.9	2.18	0.32
17206559.0	1298730.2	1.78	0.23
17206572.0	1298738.4	1.92	-0.04
17206580.7	1298748.8	2.01	0.13

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206597.0	1298756.4	1.61	-0.16
17206606.2	1298765.5	1.61	0.06
17206619.8	1298773.6	1.59	0.13
17206631.8	1298785.2	1.49	0.10
17206642.5	1298793.5	1.59	0.00
17206653.0	1298803.1	1.61	0.08
17206668.3	1298817.4	1.72	0.26
17206455.6	1299028.4	1.35	-0.01
17206463.2	1299040.8	1.40	0.01
17206478.8	1299051.3	1.49	0.37
17206487.7	1299059.7	1.51	0.05
17206508.4	1299074.4	1.61	0.10
17206518.9	1299083.2	1.58	0.20
17206530.8	1299092.1	1.61	0.05
17206542.7	1299103.8	1.46	0.02
17206554.3	1299112.1	1.49	0.04
17206564.0	1299121.9	1.29	0.28
17206577.6	1299132.5	1.26	-0.05
17206589.2	1299139.5	1.07	-0.06
17206595.4	1299145.2	0.99	-0.02
17206599.5	1299150.5	1.01	0.23
17206612.2	1299157.9	1.23	0.14
17206443.1	1299017.8	1.28	0.04
17206428.1	1299008.4	1.21	-0.21
17206417.6	1299001.2	1.25	-0.26
17206405.8	1298990.8	1.46	0.01
17206395.7	1298982.5	1.46	-0.16
17206385.0	1298972.5	1.48	-0.34
17206373.6	1298962.0	1.53	-0.21
17206360.4	1298953.4	1.63	-0.14
17206347.5	1298944.9	1.90	-0.16
17206337.8	1298933.3	2.43	-0.22
17206337.6	1298932.4	2.49	-0.16
17206337.6	1298932.5	2.44	-0.21
17206325.7	1298922.2	2.91	-0.17
17206312.2	1298915.4	2.62	-0.09
17206302.7	1298904.9	2.51	0.17
17206288.2	1298896.1	2.65	0.20
17206277.8	1298884.5	2.48	-0.16
17206273.4	1298879.4	2.74	0.10
17206269.3	1298874.5	2.54	0.08
17206255.2	1298868.0	3.31	0.22
17206243.8	1298859.0	2.73	-0.40

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206231.9	1298847.1	2.23	-0.59
17206219.1	1298838.5	2.62	0.19
17206208.5	1298826.3	2.41	-0.15
17206197.3	1298817.3	2.64	-0.03
17206186.2	1298809.8	2.72	0.04
17206176.5	1298799.5	2.54	0.01
17206164.6	1298791.4	2.65	0.12
17206149.5	1298780.6	2.94	0.13
17206141.2	1298773.2	3.03	0.07
17206125.9	1298765.8	2.88	0.07
17206118.6	1298753.3	2.63	0.15
17206111.7	1298751.1	2.36	-0.11
17206104.2	1298743.4	2.32	0.06
17206092.8	1298734.3	2.03	-0.03
17206083.8	1298725.0	2.12	-0.28
17206068.4	1298715.0	1.79	-0.10
17206058.7	1298706.2	2.29	0.02
17206047.3	1298696.7	2.72	0.07
17206033.6	1298688.8	2.91	0.20
17206023.7	1298677.8	2.45	-0.09
17206013.8	1298668.6	2.09	-0.11
17205999.3	1298658.0	2.06	0.11
17205986.4	1298650.2	2.05	-0.06
17205978.3	1298641.2	1.97	0.05
17205965.6	1298632.5	1.97	0.17
17205957.5	1298624.1	2.07	0.16
17205953.2	1298619.5	2.12	0.19
17205945.5	1298610.0	2.19	0.30
17205423.2	1298571.2	0.78	0.25
17205430.6	1298580.3	0.81	0.07
17205442.9	1298590.9	0.86	-0.02
17205454.6	1298600.1	0.90	0.25
17205465.6	1298609.1	0.98	0.28
17205477.3	1298618.5	1.06	0.45
17205489.7	1298628.4	1.08	0.48
17205501.0	1298637.3	0.99	-0.09
17205510.3	1298647.3	1.02	0.02
17205523.4	1298657.4	1.09	0.09
17205535.6	1298666.6	1.09	0.30
17205546.8	1298675.3	1.12	0.19
17205558.8	1298685.4	1.11	-0.02
17205566.2	1298691.5	1.20	0.27
17205569.4	1298694.9	1.25	0.33

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205582.0	1298703.7	1.31	0.10
17205594.6	1298714.3	1.40	0.18
17205605.8	1298723.1	1.46	0.01
17205617.0	1298732.5	1.45	0.04
17205629.4	1298742.0	1.40	0.37
17205640.5	1298752.6	1.39	0.26
17205652.5	1298762.5	1.43	-0.10
17205663.8	1298769.2	1.46	-0.10
17205676.4	1298779.9	1.55	0.16
17205686.5	1298790.4	1.61	0.22
17205697.9	1298799.9	1.71	-0.01
17205710.0	1298807.9	1.72	0.33
17205721.1	1298818.3	1.82	0.31
17205724.5	1298820.7	1.84	0.12
17205734.6	1298827.0	1.76	0.02
17205742.1	1298836.1	1.87	-0.02
17205756.0	1298846.7	1.86	0.08
17205771.0	1298857.4	1.97	-0.12
17205779.1	1298867.9	2.01	-0.04
17205791.3	1298876.1	2.34	0.17
17205802.9	1298886.2	2.35	0.20
17205814.6	1298895.6	2.40	-0.11
17205827.5	1298905.1	2.15	0.15
17205838.1	1298913.5	2.31	0.07
17205848.4	1298924.2	2.43	0.03
17205862.4	1298932.3	1.99	-0.14
17205872.4	1298939.7	2.10	-0.06
17205880.5	1298949.3	2.01	0.26
17205884.3	1298950.7	1.97	0.22
17205894.4	1298958.2	2.20	0.10
17205907.0	1298969.9	2.91	0.44
17205919.5	1298980.6	3.35	0.37
17205930.8	1298989.6	3.33	0.28
17205920.6	1298982.7	3.42	0.23
17205943.3	1298997.6	3.05	0.02
17205953.1	1299005.6	3.25	0.91
17205964.4	1299016.4	3.22	0.32
17205975.6	1299026.7	3.12	0.27
17205988.5	1299036.1	2.98	0.28
17206001.0	1299045.6	3.00	0.48
17206011.1	1299056.3	2.93	0.16
17206022.6	1299065.5	2.80	0.07
17206034.8	1299073.9	2.65	0.52

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206040.2	1299078.9	2.62	0.49
17206046.9	1299084.7	2.44	0.10
17206058.5	1299092.3	2.47	0.32
17206068.3	1299103.9	2.32	0.30
17206080.8	1299112.4	2.21	0.42
17206092.3	1299122.0	2.07	0.40
17206103.9	1299131.4	1.95	0.37
17206114.4	1299142.5	1.84	0.18
17206127.5	1299150.2	1.88	0.17
17206139.0	1299158.5	1.93	0.21
17206151.2	1299167.7	1.98	0.54
17206160.1	1299178.9	1.99	0.39
17206171.7	1299187.5	2.06	0.40
17206182.9	1299197.1	1.71	0.11
17206197.4	1299207.6	2.08	0.35
17206209.4	1299216.2	2.02	0.40
17206221.3	1299225.0	2.04	0.34
17206230.1	1299235.2	1.76	0.21
17206243.5	1299246.2	1.61	0.49
17206255.0	1299254.5	1.48	0.35
17206265.2	1299264.1	1.60	0.39
17206277.1	1299273.2	1.52	0.56
17206287.8	1299283.6	1.64	0.55
17206301.4	1299291.4	1.63	0.39
17206313.2	1299302.5	1.30	0.34
17206326.4	1299313.2	1.33	0.42
17206337.6	1299323.0	1.37	0.61
17206169.4	1299571.7	1.54	0.51
17206180.6	1299578.2	1.38	0.39
17206189.0	1299589.0	1.41	0.29
17206201.9	1299599.7	1.34	0.29
17206213.8	1299609.1	1.30	0.51
17206224.0	1299618.4	1.05	0.19
17206236.4	1299628.0	1.21	0.42
17206247.5	1299636.5	1.19	0.38
17206259.9	1299646.2	0.89	0.08
17206156.3	1299560.1	1.51	0.42
17206151.4	1299554.4	1.53	0.47
17206143.3	1299549.9	1.50	0.16
17206133.8	1299541.9	1.49	0.31
17206122.9	1299533.9	1.57	0.14
17206111.0	1299523.8	1.70	0.35
17206097.0	1299512.8	1.73	0.10

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17206084.2	1299504.0	1.84	0.25
17206075.5	1299493.5	1.89	0.22
17206063.7	1299484.8	1.93	0.15
17206051.5	1299477.1	1.91	0.09
17206041.2	1299469.2	2.05	0.23
17206025.9	1299458.7	2.08	0.45
17206018.0	1299448.2	2.06	0.07
17206006.2	1299438.5	2.11	-0.10
17205994.1	1299429.4	2.18	0.02
17205982.6	1299417.5	2.28	0.18
17205970.2	1299410.9	2.30	0.32
17205960.9	1299400.0	2.46	0.00
17205946.3	1299387.3	2.43	0.11
17205933.7	1299380.4	2.36	0.09
17205925.3	1299371.1	2.40	0.08
17205910.4	1299360.0	2.52	0.04
17205902.6	1299352.6	2.50	0.02
17205888.6	1299342.7	2.24	-0.09
17205876.4	1299332.7	2.24	-0.14
17205864.2	1299324.3	2.47	0.11
17205852.0	1299315.3	2.61	0.15
17205842.5	1299305.2	2.42	0.06
17205837.5	1299298.2	2.60	0.04
17205831.2	1299296.4	2.64	0.08
17205819.2	1299284.7	2.82	0.10
17205808.4	1299277.5	3.05	-0.18
17205797.4	1299265.6	3.19	0.03
17205783.3	1299260.3	2.90	-0.25
17205773.7	1299247.0	2.82	0.23
17205762.1	1299240.0	2.91	0.31
17205748.7	1299228.4	2.87	0.29
17205738.4	1299218.0	2.77	0.18
17205725.5	1299210.8	2.90	0.06
17205714.1	1299198.5	3.07	0.35
17205703.5	1299189.9	2.22	-0.01
17205691.5	1299181.0	2.36	0.20
17205679.9	1299171.4	2.50	-0.02
17205674.8	1299169.0	2.66	0.30
17205665.7	1299160.6	2.68	0.20
17205654.3	1299150.6	2.47	0.25
17205643.8	1299142.3	2.39	-0.14
17205631.6	1299134.3	2.22	0.14
17205619.9	1299124.2	2.26	0.09

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205611.3	1299113.4	1.88	-0.20
17205600.1	1299103.2	2.12	0.25
17205585.4	1299095.5	2.06	0.25
17205576.7	1299084.8	2.02	0.25
17205560.6	1299075.7	2.33	0.34
17205551.7	1299066.0	2.33	0.23
17205540.4	1299059.4	2.65	-0.06
17205529.1	1299045.4	2.55	0.34
17205517.0	1299038.0	2.40	0.17
17205521.7	1299039.1	2.45	0.36
17205505.0	1299029.6	2.26	0.24
17205494.1	1299020.1	2.51	0.22
17205481.2	1299008.7	2.37	-0.13
17205470.2	1299000.7	2.24	-0.26
17205457.6	1298990.8	1.90	0.01
17205447.0	1298980.4	1.70	0.12
17205436.1	1298972.4	1.45	0.09
17205426.4	1298963.7	1.11	0.12
17205054.1	1299049.3	0.76	0.67
17205066.0	1299056.8	0.89	0.60
17205078.4	1299066.0	1.00	0.71
17205088.1	1299073.4	1.05	0.61
17205100.8	1299084.7	0.94	0.35
17205112.3	1299094.2	0.94	0.48
17205125.1	1299104.4	1.09	0.41
17205136.0	1299111.6	1.09	0.42
17205147.4	1299121.9	1.20	0.20
17205157.9	1299131.3	1.26	0.41
17205170.1	1299143.0	1.33	0.24
17205173.9	1299145.5	1.42	0.33
17205183.9	1299152.9	1.53	0.42
17205192.7	1299160.4	1.53	0.28
17205205.7	1299169.5	1.64	0.45
17205215.0	1299179.7	1.60	0.45
17205227.7	1299188.2	1.73	0.47
17205239.9	1299200.6	1.79	0.61
17205252.2	1299207.9	1.88	0.43
17205262.9	1299218.8	1.97	0.29
17205274.0	1299226.7	2.22	0.56
17205286.5	1299238.8	2.15	0.05
17205300.3	1299246.3	2.58	0.24
17205313.1	1299257.9	2.32	0.29
17205323.6	1299264.2	2.51	0.36

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205331.7	1299272.7	2.88	0.17
17205335.8	1299274.9	3.03	0.31
17205346.3	1299285.7	3.00	0.19
17205356.3	1299295.0	2.97	0.52
17205371.3	1299304.9	3.05	0.11
17205379.1	1299311.9	3.06	0.09
17205390.9	1299322.6	2.55	0.55
17205404.8	1299331.8	2.24	0.43
17205413.5	1299341.9	2.01	-0.03
17205426.5	1299354.5	1.84	0.02
17205437.7	1299363.6	1.78	0.17
17205450.3	1299370.7	1.80	-0.45
17205463.2	1299378.9	1.77	-0.06
17205473.2	1299390.0	1.96	0.08
17205484.2	1299399.2	2.36	0.19
17205490.0	1299402.8	2.41	-0.12
17205490.4	1299402.9	2.42	-0.11
17205496.7	1299407.6	1.94	-0.59
17205506.4	1299420.4	1.68	-0.28
17205517.9	1299426.9	1.90	-0.06
17205529.4	1299434.1	1.48	-0.32
17205543.3	1299445.2	1.67	-0.36
17205551.7	1299454.2	2.34	0.31
17205565.4	1299464.0	1.93	-0.78
17205576.3	1299474.6	2.10	-0.61
17205587.7	1299482.4	2.48	0.08
17205596.4	1299492.4	2.45	-0.11
17205612.8	1299505.4	2.30	0.13
17205623.2	1299513.4	2.33	-0.13
17205633.8	1299521.2	2.31	0.08
17205645.5	1299533.1	2.14	-0.15
17205659.7	1299544.6	2.19	0.11
17205647.4	1299532.0	2.15	-0.14
17205669.4	1299551.5	2.40	0.36
17205679.9	1299561.8	2.35	-0.21
17205682.8	1299563.3	2.50	-0.06
17205684.5	1299562.3	2.59	0.04
17205787.0	1300031.1	1.61	0.46
17205771.9	1300023.0	1.54	0.30
17205759.5	1300011.8	1.44	0.44
17205747.7	1300003.9	1.49	0.33
17205736.9	1299994.6	1.53	0.56
17205724.9	1299985.0	1.58	0.23

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205713.1	1299975.8	1.68	0.26
17205703.6	1299965.9	1.57	0.14
17205689.1	1299953.6	1.71	0.24
17205676.8	1299946.6	1.71	0.33
17205668.3	1299935.5	1.60	0.28
17205656.0	1299928.9	1.67	0.26
17205644.3	1299917.3	1.55	0.33
17205633.7	1299908.9	1.56	0.06
17205619.8	1299898.7	1.61	0.21
17205611.2	1299888.9	1.51	0.11
17205596.9	1299877.2	1.64	--
17205589.7	1299872.2	1.46	--
17205585.8	1299869.8	1.46	--
17205576.7	1299860.9	1.41	--
17205564.7	1299851.7	1.51	--
17205552.4	1299843.5	1.52	--
17205541.1	1299835.1	1.59	--
17205527.5	1299825.7	1.72	0.73
17205514.8	1299811.3	1.69	0.69
17205503.8	1299806.8	1.69	0.17
17205495.2	1299791.3	1.76	0.41
17205482.5	1299783.4	1.77	0.27
17205468.9	1299776.7	1.83	0.48
17205455.3	1299764.3	1.97	0.40
17205444.7	1299756.9	1.92	0.24
17205435.5	1299743.8	1.96	0.37
17205434.9	1299744.6	1.80	0.22
17205419.3	1299735.6	1.85	0.02
17205410.7	1299727.4	2.05	0.22
17205399.6	1299717.4	2.00	0.13
17205390.7	1299710.0	2.13	0.27
17205388.4	1299709.5	2.12	0.13
17205378.5	1299698.4	2.32	0.44
17205365.4	1299691.1	1.91	0.24
17205351.9	1299682.2	1.97	0.07
17205342.5	1299670.9	2.51	0.41
17205331.4	1299660.9	2.64	0.42
17205319.9	1299655.4	2.61	0.18
17205306.9	1299645.4	2.52	0.34
17205294.3	1299632.5	2.25	0.33
17205281.9	1299621.0	2.06	0.47
17205275.0	1299616.3	2.17	0.57
17205274.3	1299616.4	2.14	0.17

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205261.1	1299604.4	2.11	0.11
17205247.9	1299596.1	1.62	0.13
17205236.2	1299585.9	1.81	0.42
17205223.7	1299577.4	2.23	-0.16
17205212.9	1299561.9	2.16	0.45
17205197.6	1299557.0	2.01	0.23
17205188.4	1299546.0	1.96	0.34
17205178.3	1299538.7	1.94	0.34
17205168.3	1299528.6	1.96	0.43
17205156.8	1299518.4	1.81	0.02
17205146.5	1299511.0	1.89	0.35
17205132.6	1299501.3	1.70	0.32
17205120.5	1299490.6	1.65	0.36
17205115.9	1299489.4	1.46	0.02
17205106.9	1299477.1	1.48	0.37
17205097.2	1299472.4	1.35	0.24
17205084.7	1299463.2	1.26	0.26
17205073.2	1299452.3	1.18	0.41
17205063.5	1299442.8	1.13	0.17
17205052.2	1299434.2	1.04	0.46
17205041.6	1299424.9	0.85	-0.02
17205029.3	1299415.2	1.04	0.09
17205018.0	1299404.5	1.12	0.23
17205007.1	1299396.3	1.04	0.56
17204994.4	1299386.2	0.99	0.36
17204982.5	1299376.4	0.87	0.35
17204971.2	1299366.8	0.80	0.29
17204924.9	1299716.4	1.03	0.27
17204935.4	1299726.5	1.02	0.22
17204946.8	1299736.0	1.04	0.33
17204957.9	1299745.0	1.08	-0.04
17204972.6	1299753.0	1.27	0.48
17204983.9	1299761.2	1.22	0.04
17204993.9	1299773.4	1.37	0.35
17205006.4	1299780.1	1.49	0.08
17205016.2	1299789.4	1.53	0.21
17205027.7	1299801.1	1.61	0.07
17205041.1	1299809.9	1.70	0.39
17205053.7	1299821.4	1.78	0.13
17205063.2	1299830.6	1.86	0.15
17205071.4	1299837.2	1.92	-0.02
17205074.7	1299839.5	1.91	-0.03
17205086.2	1299849.9	1.94	-0.10

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205098.7	1299857.7	2.00	0.17
17205109.2	1299869.2	2.07	-0.17
17205121.0	1299877.2	2.25	0.20
17205132.8	1299887.1	2.16	0.11
17205144.4	1299898.4	2.14	-0.01
17205156.6	1299905.3	2.17	0.13
17205168.0	1299915.1	2.26	0.12
17205180.8	1299927.6	1.81	0.31
17205191.0	1299933.9	1.59	-0.07
17205201.3	1299944.6	2.20	0.56
17205215.7	1299952.6	1.85	0.04
17205224.9	1299963.7	2.57	0.20
17205225.3	1299964.2	2.56	0.19
17205239.3	1299973.2	2.29	-0.06
17205251.4	1299982.7	2.17	0.27
17205260.4	1299991.2	1.86	0.06
17205270.2	1299999.9	1.81	-0.11
17205284.0	1300012.6	1.62	-0.31
17205295.4	1300019.3	1.72	0.06
17205307.6	1300031.6	2.22	-0.01
17205321.2	1300040.0	2.63	0.17
17205330.2	1300047.5	2.76	0.00
17205342.8	1300056.7	2.94	-0.06
17205354.1	1300066.7	2.56	0.05
17205367.3	1300076.7	2.44	0.25
17205379.1	1300088.0	2.46	-0.04
17205387.6	1300094.5	2.42	-0.10
17205400.8	1300105.8	2.42	-0.02
17205411.4	1300114.5	2.23	0.18
17205425.4	1300126.8	1.87	-0.07
17205435.0	1300134.8	2.17	0.05
17205445.5	1300141.9	2.02	0.24
17205458.0	1300149.6	1.46	--
17205470.2	1300163.5	1.55	--
17205480.1	1300171.8	1.43	--
17205492.8	1300182.2	1.31	--
17205503.4	1300191.5	1.28	--
17205516.4	1300200.5	1.30	--
17205526.4	1300210.9	1.27	--
17205538.9	1300220.2	1.31	--
17205544.2	1300226.3	1.30	--
17205552.0	1300229.8	1.19	--
17205561.9	1300239.4	1.30	--

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205573.0	1300248.2	1.13	--
17205584.9	1300257.3	1.24	--
17205266.6	1300396.2	0.96	--
17205290.4	1300412.7	0.82	--
17205291.9	1300413.2	0.76	--
17205283.9	1300410.7	0.90	--
17205276.6	1300400.9	1.04	--
17205272.4	1300392.2	1.10	--
17205265.0	1300382.9	1.19	--
17205253.2	1300372.9	1.28	--
17205241.9	1300363.5	1.32	--
17205229.7	1300354.2	1.40	--
17205219.3	1300344.1	1.40	--
17205205.1	1300334.1	1.38	--
17205193.6	1300323.6	1.42	--
17205182.2	1300314.3	1.52	--
17205170.7	1300304.0	1.55	--
17205158.5	1300296.8	1.62	-0.08
17205146.1	1300287.5	1.89	0.19
17205137.1	1300280.8	1.94	0.49
17205131.0	1300275.3	1.64	0.19
17205122.6	1300269.7	1.70	0.52
17205112.7	1300260.8	1.52	0.35
17205103.9	1300250.6	1.35	0.23
17205089.4	1300241.2	1.30	0.19
17205082.2	1300230.5	1.86	0.76
17205070.6	1300218.8	1.72	0.23
17205056.7	1300210.3	1.07	0.20
17205042.1	1300202.5	1.24	0.45
17205030.3	1300197.2	1.53	0.11
17205020.6	1300180.6	1.91	-0.22
17205008.5	1300169.6	1.92	0.16
17204997.5	1300168.5	1.73	-0.18
17204988.6	1300154.2	1.73	0.23
17204974.5	1300142.8	2.02	0.35
17205931.0	1298600.6	1.72	-0.05
17205929.9	1298601.0	1.72	-0.05
17205918.5	1298593.8	1.58	-0.74
17205907.5	1298581.9	1.45	-0.55
17205895.7	1298573.6	1.38	-0.68
17205882.2	1298564.7	1.16	-0.33
17205872.8	1298555.6	1.09	-0.24
17205859.7	1298545.1	0.98	0.03

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205846.0	1298534.4	0.90	-0.20
17205836.4	1298524.1	0.83	-0.22
17205824.2	1298516.1	0.90	0.01
17205813.2	1298506.1	0.87	-0.27
17205801.4	1298496.9	0.70	-0.28
17205797.6	1298493.2	0.71	-0.32
17205788.0	1298486.0	0.73	-0.06
17205779.5	1298478.6	0.81	-0.20
17205767.0	1298467.6	0.74	-0.21
17205754.8	1298458.9	0.79	-0.24
17205745.9	1298448.1	0.75	-0.02
17205732.7	1298441.1	0.70	-0.10
17205721.8	1298430.0	0.70	0.22
17205711.0	1298421.9	0.57	-0.06
17205697.3	1298412.3	0.51	-0.45
17205686.0	1298401.1	0.62	-0.10
17205677.1	1298393.1	0.57	-0.36
17205664.3	1298382.9	0.69	-0.21
17205652.9	1298372.9	0.81	-0.18
17206346.7	1299330.5	0.76	0.04
17206353.8	1299336.9	0.73	0.13
17206359.2	1299340.8	0.80	0.21
17206370.5	1299350.3	1.10	0.50
17206381.5	1299359.1	0.83	-0.21
17206395.5	1299372.9	0.84	0.58
17206404.9	1299379.4	0.83	0.57
17206415.8	1299389.0	0.80	0.35
17206428.8	1299397.8	0.82	0.25
17206439.7	1299407.1	0.85	0.44
17206451.2	1299416.2	0.87	-0.01
17206461.9	1299426.6	0.80	0.21
17206474.1	1299435.8	0.69	-0.01
17206486.7	1299444.9	0.76	0.23
17205691.4	1299569.7	1.98	-0.58
17205704.4	1299576.6	1.74	-0.33
17205716.6	1299588.8	1.42	--
17205728.8	1299599.8	1.39	--
17205738.8	1299607.4	1.31	--
17205750.1	1299619.0	1.34	--
17205764.2	1299625.3	1.31	--
17205773.9	1299635.5	1.38	--
17205784.4	1299641.6	1.36	--
17205793.8	1299655.3	1.21	--

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205804.5	1299663.0	1.16	--
17205809.5	1299668.1	1.25	--
17205818.7	1299675.7	1.03	--
17205832.1	1299685.0	1.19	--
17205839.4	1299693.6	1.60	--
17205854.2	1299701.7	1.55	--
17205864.5	1299711.3	0.21	--
17205876.3	1299719.8	0.70	-0.57
17205888.2	1299730.6	0.60	-0.66
17205899.3	1299740.4	0.73	--
17205910.6	1299748.4	0.65	--
17205924.7	1299758.5	0.64	--
17205933.9	1299768.8	0.65	--
17205947.7	1299777.3	0.56	--
17205960.1	1299786.2	0.58	--
17205964.1	1299791.2	0.62	--
17205970.8	1299795.6	0.66	--
17205979.1	1299804.7	0.53	--
17205991.7	1299817.4	0.23	--
17205414.6	1298953.8	0.83	-0.40
17205402.0	1298943.9	1.22	0.14
17205389.7	1298934.9	1.02	0.05
17205378.5	1298925.3	0.85	0.07
17205366.4	1298915.7	0.87	0.00
17205360.2	1298912.8	1.11	0.24
17205352.6	1298906.4	0.74	-0.27
17205344.7	1298893.9	1.00	0.03
17205332.2	1298887.0	1.08	0.07
17205321.4	1298879.1	0.89	0.25
17205309.2	1298869.4	1.02	0.25
17205297.5	1298858.6	0.87	0.03
17205285.5	1298847.6	0.88	0.05
17205275.1	1298838.6	0.90	0.13
17205262.8	1298829.9	0.93	0.18
17205251.0	1298818.2	0.83	0.05
17205240.2	1298810.3	0.86	0.08

Table A-2
BU Delta 3 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17205230.5	1298801.2	0.70	0.22
17205216.9	1298790.3	0.83	0.16

Notes:
1. Northing, easting, and elevation were obtained from Anchor QEA's 2025 post-construction monitoring event.
2. Horizontal Datum: NAD83 State Plane South (U.S. foot)
3. Vertical Datum: NAVD88 (U.S. foot)
4. Delta values were determined by subtracting the elevation from the nearest survey point recorded during the as-built survey to each Anchor QEA survey point. Delta values were only determined for Anchor QEA survey points when there was an associated as-built survey point within 20 feet.
--: no as-built survey point identified within 20 feet of the Anchor QEA survey point
BU: beneficial use
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988

Table A-3
BU Delta 4 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204755.6	1298212.6	0.15	-0.53
17204745.4	1298204.1	0.80	0.27
17204733.8	1298192.2	0.68	0.25
17204722.6	1298185.2	0.72	0.41
17204718.2	1298183.1	0.66	0.04
17204710.0	1298173.9	0.67	0.05
17204699.1	1298165.8	0.64	0.21
17204685.9	1298155.4	0.54	0.04
17204675.4	1298147.6	0.45	0.15
17204664.3	1298138.3	0.31	0.00
17204653.2	1298128.0	0.44	0.32
17204641.2	1298120.3	0.26	0.10
17204467.9	1297974.7	0.16	-0.03
17204478.8	1297982.4	0.21	0.03
17204488.7	1297992.9	0.15	0.11
17204504.7	1298002.5	0.40	0.10
17204516.9	1298014.1	0.40	0.26
17204525.3	1298022.3	0.37	0.23
17204537.3	1298031.7	0.38	0.24
17204548.6	1298041.4	0.38	0.20
17204558.5	1298050.7	0.17	-0.07
17204571.3	1298059.5	0.23	-0.07
17204583.1	1298068.4	0.22	0.30
17204588.0	1298073.8	0.26	-0.02
17204595.5	1298078.8	0.17	-0.13
17204606.2	1298089.4	0.29	0.09
17204618.8	1298098.0	0.26	0.06
17204629.9	1298108.3	0.36	-0.02
17204104.0	1298063.1	-0.13	--
17204118.5	1298072.9	0.25	--
17204130.3	1298081.9	0.20	--
17204141.1	1298092.3	0.28	--
17204152.9	1298102.6	0.25	--
17204164.3	1298111.5	0.21	--
17204175.6	1298121.2	0.21	--
17204187.5	1298129.7	0.17	--
17204197.6	1298141.4	0.21	--
17204210.0	1298150.0	0.15	--
17204221.1	1298161.0	0.19	--
17204227.6	1298163.0	0.26	--
17204234.1	1298170.1	0.19	--
17204244.6	1298180.4	0.20	--
17204256.6	1298190.0	0.05	--
17204267.6	1298197.7	-0.05	--
17204278.3	1298209.7	0.03	--
17204291.9	1298215.4	0.10	--
17204300.0	1298228.7	-0.02	--
17204316.4	1298236.0	0.19	--
17204324.2	1298245.5	0.24	-0.01
17204336.6	1298254.5	0.18	-0.09
17204348.8	1298264.4	0.39	0.27
17204359.5	1298271.3	0.17	-0.28
17204361.9	1298275.1	0.29	0.09
17204370.9	1298282.4	0.39	-0.12
17204381.2	1298293.1	0.39	0.02
17204393.3	1298302.6	0.37	0.20
17204406.9	1298311.7	0.44	0.16
17204420.6	1298322.7	0.39	-0.10
17204430.6	1298331.8	0.41	0.05
17204440.4	1298342.0	0.39	-0.02
17204452.9	1298350.9	0.38	-0.07
17204464.0	1298360.0	0.47	0.07
17204476.1	1298368.6	0.50	-0.08
17204488.6	1298379.5	0.67	0.16
17204491.5	1298381.8	0.68	0.33
17204499.2	1298390.3	0.73	0.14
17204510.9	1298399.6	0.70	0.06
17204521.5	1298408.6	0.69	0.11
17204534.1	1298419.4	0.69	0.13
17204545.4	1298429.4	0.69	0.02
17204554.2	1298435.7	0.84	0.24
17204567.5	1298445.6	0.84	0.20
17204580.1	1298455.5	0.96	-0.04

Table A-3
BU Delta 4 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204582.1	1298457.8	1.01	0.01
17204592.3	1298466.8	0.90	-0.10
17204604.0	1298476.5	0.83	0.08
17204612.6	1298486.2	0.85	0.00
17204623.5	1298491.4	0.83	0.04
17204628.9	1298495.7	0.82	0.03
17204637.4	1298505.0	0.93	0.26
17204648.6	1298515.1	0.97	0.31
17204661.6	1298522.7	1.11	0.39
17204672.0	1298533.7	1.04	0.21
17204685.7	1298543.8	1.12	0.26
17204692.6	1298553.1	1.14	0.03
17204694.9	1298554.0	2.04	0.99
17204706.0	1298561.8	0.89	0.06
17204714.8	1298569.6	0.67	-0.16
17204724.5	1298574.1	0.53	--
17203845.1	1298236.9	-0.10	--
17203856.2	1298246.1	-0.07	--
17203869.6	1298257.4	-0.21	--
17203880.9	1298265.5	-0.15	--
17203889.8	1298277.2	-0.10	--
17203903.4	1298284.7	-0.32	--
17203913.5	1298295.2	-0.40	--
17203926.8	1298302.6	-0.32	--
17203935.8	1298313.3	-0.40	--
17203948.2	1298323.1	-0.34	--
17203962.0	1298331.4	-0.32	--
17203964.6	1298336.9	-0.28	--
17203972.2	1298342.1	-0.32	--
17203983.9	1298351.3	-0.31	--
17203995.3	1298361.1	-0.24	--
17204006.6	1298370.8	-0.33	--
17204020.5	1298380.6	-0.31	--
17204027.2	1298392.5	-0.37	--
17204040.3	1298399.4	-0.45	--
17204056.0	1298409.4	-0.19	--
17204063.3	1298420.7	-0.32	--
17204074.6	1298429.3	-0.27	--
17204083.8	1298438.9	-0.50	--
17204097.5	1298444.6	-0.33	--
17204101.3	1298447.8	-0.34	--
17204108.6	1298455.5	-0.35	--
17204119.9	1298467.7	-0.24	--
17204133.0	1298475.7	-0.34	--
17204146.6	1298485.1	-0.32	--
17204156.9	1298494.5	-0.33	--
17204167.8	1298505.2	-0.26	--
17204180.1	1298515.1	-0.28	--
17204189.4	1298524.9	-0.35	--
17204203.0	1298533.6	-0.41	--
17204214.3	1298543.5	-0.25	--
17204227.1	1298551.8	-0.14	--
17204230.8	1298552.9	-0.23	--
17204236.7	1298563.5	-0.18	--
17204250.0	1298573.4	-0.05	--
17204259.6	1298581.8	-0.10	--
17204271.6	1298593.6	0.03	--
17204283.3	1298604.8	0.15	--
17204294.6	1298614.9	0.09	--
17204309.0	1298617.7	0.13	--
17204316.6	1298629.7	0.10	--
17204328.5	1298638.4	0.08	--
17204340.7	1298649.4	0.12	--
17204353.9	1298659.5	0.15	--
17204360.0	1298663.1	0.10	--
17204364.8	1298667.9	0.11	--
17204374.0	1298678.6	0.22	--
17204386.8	1298686.0	0.19	--
17204398.8	1298695.9	-0.05	--
17204410.8	1298705.9	0.19	--
17204422.6	1298714.5	0.21	--
17204433.6	1298724.5	0.20	--
17204444.1	1298733.3	0.13	--

Table A-3
BU Delta 4 Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17204456.0	1298742.6	0.25	--
17204467.4	1298753.1	0.14	--
17204479.1	1298763.5	0.37	--
17204490.6	1298773.6	0.43	--
17204503.6	1298783.3	0.39	--
17204517.3	1298792.7	0.38	--
17204527.2	1298802.2	0.12	--
17203880.5	1298656.6	0.27	--
17203895.5	1298666.0	0.21	--
17203906.0	1298676.1	0.28	--
17203917.9	1298685.2	0.19	--
17203927.4	1298697.3	0.10	--
17203942.1	1298704.1	0.15	--
17203953.3	1298715.1	0.10	--
17203963.6	1298726.6	-0.23	--
17203975.5	1298735.1	0.11	--
17203986.4	1298745.1	0.17	--
17203997.9	1298754.4	0.04	--
17204002.7	1298757.9	0.09	--
17204009.4	1298764.5	0.09	--
17204021.8	1298771.6	0.10	--
17204032.5	1298781.2	0.12	--
17204044.7	1298790.1	0.12	--
17204056.2	1298799.5	0.00	--
17204067.9	1298809.2	0.05	--
17204079.4	1298818.8	0.26	--
17204087.9	1298830.7	1.51	--
17204104.7	1298840.2	1.41	--
17204112.5	1298846.0	0.17	--
17204126.1	1298862.9	0.33	--
17204136.2	1298866.9	0.44	--
17204137.6	1298869.3	0.44	--
17204148.5	1298879.2	0.37	--
17204160.1	1298889.8	0.32	--
17204171.3	1298898.7	0.54	--
17204184.2	1298908.8	0.51	--
17204193.5	1298916.4	0.23	--
17204205.7	1298926.5	0.16	--
17204215.5	1298934.6	0.33	--
17204230.8	1298945.7	0.43	--
17204240.5	1298955.2	0.33	--
17204254.6	1298963.2	0.39	--
17204263.1	1298973.0	0.18	--
17204265.1	1298976.1	0.13	--
17204274.4	1298984.7	0.36	--
17204285.6	1298992.6	0.33	--
17204298.4	1299002.2	0.26	--
17204310.0	1299014.4	0.04	--
17204029.0	1299167.3	0.64	--
17204025.6	1299161.6	0.59	--

Notes:
1. Northing, easting, and elevation were obtained from Anchor QEA's 2025 post-construction monitoring event.
2. Horizontal Datum: NAD83 State Plane South (U.S. foot)
3. Vertical Datum: NAVD88 (U.S. foot)
4. Delta values were determined by subtracting the elevation from the nearest survey point recorded during the as-built survey to each Anchor QEA survey point. Delta values were only determined for Anchor QEA survey points when there was an associated as-built survey point within 20 feet.
--: no as-built survey point identified within 20 feet of the Anchor QEA survey point
BU: beneficial use
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200091.9	1304122.5	0.80	-0.41
17200101.1	1304132.5	0.66	-0.68
17200105.9	1304143.3	1.08	-0.39
17200108.1	1304148.5	1.25	-0.07
17200112.4	1304160.9	0.98	-0.20
17200118.3	1304173.7	0.85	-0.37
17200124.1	1304186.5	0.76	-0.40
17200131.7	1304202.9	0.67	-0.57
17200137.8	1304215.3	-0.12	-1.63
17200145.3	1304226.9	-0.11	-1.87
17200151.5	1304241.1	-0.82	-2.27
17200157.8	1304254.5	0.31	-1.17
17200163.8	1304268.1	0.47	-1.01
17200170.7	1304282.1	0.34	-1.14
17200085.3	1304107.0	1.85	0.66
17200080.2	1304093.6	2.00	0.79
17200071.9	1304079.9	1.48	0.19
17200068.2	1304065.8	1.51	0.40
17200060.7	1304053.6	1.44	0.26
17200055.6	1304040.8	1.43	0.31
17200048.1	1304024.0	1.49	0.20
17200039.8	1304010.0	1.66	0.36
17200034.7	1303998.2	1.44	0.22
17200030.0	1303985.0	1.41	0.26
17200020.6	1303972.4	1.42	0.20
17200017.0	1303961.1	1.41	0.17
17200015.1	1303957.8	1.42	0.18
17200011.8	1303947.1	1.44	0.13
17200002.8	1303933.0	1.44	0.11
17199997.0	1303918.1	1.57	0.12
17199990.6	1303906.1	1.59	-0.02
17199985.2	1303892.2	1.59	0.08
17199978.1	1303878.8	1.59	-0.02
17199968.4	1303862.8	1.78	-0.09
17199961.9	1303849.8	1.97	-0.02
17199956.8	1303835.2	1.89	-0.15
17199952.4	1303818.8	1.79	-0.12
17199942.6	1303811.8	1.73	-0.12
17199939.0	1303798.7	1.81	-0.10
17199929.4	1303783.8	1.81	-0.14
17199929.0	1303778.8	1.84	-0.11
17199923.6	1303769.9	1.85	0.08
17199918.9	1303756.0	1.84	0.17
17199910.6	1303741.9	1.85	-0.03

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199907.0	1303727.6	2.61	0.49
17199896.1	1303716.5	2.57	0.21
17199891.3	1303699.4	2.62	0.33
17199885.6	1303687.1	2.68	0.19
17199880.1	1303672.8	2.66	0.03
17199870.8	1303663.2	2.81	0.19
17199865.7	1303647.1	3.05	0.35
17199859.2	1303633.4	3.12	0.24
17199854.7	1303621.5	3.19	0.26
17199848.4	1303606.3	3.19	0.40
17199840.8	1303594.6	3.30	0.33
17199837.4	1303591.7	3.31	0.33
17199833.3	1303578.1	3.36	0.39
17199829.6	1303565.7	3.51	0.30
17199818.7	1303550.3	3.65	0.40
17199814.3	1303537.1	3.62	0.38
17199807.0	1303525.7	3.68	0.33
17199800.5	1303513.2	3.83	0.37
17199793.1	1303499.8	3.83	0.24
17199787.2	1303483.2	3.86	0.11
17199782.9	1303471.6	4.12	0.37
17199776.5	1303459.2	4.01	0.25
17199769.5	1303445.0	3.95	0.30
17199763.3	1303431.0	3.97	0.30
17199754.8	1303418.5	3.99	0.34
17199750.9	1303413.3	3.99	0.28
17199750.2	1303402.2	4.27	0.47
17199744.7	1303390.1	4.20	0.35
17199737.7	1303375.9	4.25	0.41
17199731.6	1303364.3	4.33	0.40
17199724.6	1303351.8	4.33	0.29
17199716.2	1303338.5	4.37	0.33
17199712.4	1303324.5	4.28	0.28
17199704.5	1303312.8	4.29	0.41
17199697.0	1303296.6	4.32	0.25
17199691.3	1303283.8	4.30	0.17
17199683.6	1303270.9	4.31	0.29
17199678.4	1303256.6	4.43	0.38
17199669.9	1303243.1	4.61	0.52
17199666.9	1303230.0	4.69	0.40
17199664.1	1303229.2	4.72	0.44
17199661.0	1303215.4	4.93	0.35
17199651.8	1303201.9	4.99	0.38
17199645.7	1303188.2	5.19	0.54

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199641.4	1303174.0	5.32	0.38
17199635.1	1303160.1	5.36	0.45
17199628.6	1303147.4	5.22	0.19
17199622.5	1303130.6	5.26	0.48
17199615.7	1303118.6	5.42	0.43
17199606.2	1303107.1	5.29	0.29
17199601.1	1303093.8	5.28	0.34
17199595.6	1303080.6	5.52	0.53
17199588.2	1303064.9	5.66	0.36
17199581.8	1303051.0	5.83	0.42
17199579.2	1303047.8	5.85	0.45
17199575.2	1303039.6	5.93	0.54
17199567.1	1303026.7	5.90	0.55
17199563.7	1303013.7	5.95	0.65
17199556.5	1302997.8	5.76	0.59
17199548.3	1302984.6	5.76	0.57
17199541.0	1302972.5	5.67	0.74
17199533.5	1302959.4	5.66	0.90
17199529.2	1302944.2	5.80	0.78
17199523.8	1302931.0	5.66	0.30
17199517.1	1302917.7	5.70	0.67
17199510.5	1302903.7	5.37	0.60
17199505.5	1302891.7	5.26	0.38
17199498.2	1302877.8	5.23	0.13
17199489.8	1302868.1	5.22	0.26
17199483.3	1302850.9	4.96	0.06
17199476.5	1302836.8	4.89	0.22
17199471.9	1302821.6	4.90	0.02
17199463.6	1302805.9	4.66	0.17
17199456.0	1302795.6	4.50	0.35
17199448.8	1302780.4	4.43	0.25
17199443.5	1302765.7	4.55	0.38
17199439.3	1302753.5	4.38	0.29
17199433.4	1302741.2	4.32	0.38
17199425.6	1302725.8	4.21	0.32
17199418.8	1302712.8	3.86	0.10
17199412.7	1302700.6	3.85	0.10
17199405.4	1302685.8	3.85	0.26
17199403.0	1302679.2	3.96	0.47
17199400.6	1302672.3	4.00	0.36
17199392.5	1302658.7	3.62	0.14
17199386.7	1302648.1	3.85	0.28
17199378.8	1302633.4	3.66	0.17
17199372.2	1302619.0	3.65	0.13

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199363.9	1302606.2	3.74	0.22
17199357.7	1302590.6	3.79	0.34
17199357.8	1302574.5	3.93	0.38
17199343.5	1302563.8	3.98	0.22
17199340.1	1302552.0	3.91	0.22
17199335.9	1302533.9	3.88	0.02
17199332.6	1302522.9	2.72	0.31
17199321.6	1302512.5	1.78	0.03
17199616.7	1302436.3	4.05	0.76
17199612.0	1302424.0	1.83	0.56
17199605.9	1302408.7	1.79	0.36
17199605.9	1302408.6	1.70	0.27
17199622.6	1302447.6	4.21	0.58
17199629.7	1302459.8	4.16	0.49
17199638.0	1302475.2	4.10	0.34
17199644.1	1302491.5	4.27	0.32
17199652.2	1302501.2	4.36	0.44
17199654.4	1302515.1	4.31	0.41
17199663.0	1302526.9	4.56	0.75
17199669.7	1302541.4	4.54	0.49
17199674.3	1302552.3	4.51	0.39
17199677.0	1302556.6	4.47	0.35
17199680.5	1302570.5	4.70	0.71
17199687.7	1302581.5	4.88	0.56
17199692.9	1302595.3	4.99	0.54
17199704.3	1302607.5	4.98	0.52
17199706.6	1302622.4	5.05	0.56
17199714.0	1302636.4	5.16	0.58
17199720.3	1302651.5	5.21	0.63
17199728.2	1302663.5	5.25	0.47
17199733.6	1302676.3	5.39	0.30
17199741.0	1302691.3	5.53	0.23
17199746.4	1302705.0	5.88	0.47
17199751.7	1302717.4	5.74	0.58
17199760.1	1302731.9	5.76	0.79
17199764.1	1302743.7	5.89	0.72
17199772.0	1302760.1	5.82	0.79
17199778.7	1302771.2	5.75	0.65
17199785.1	1302785.7	5.76	0.70
17199790.5	1302801.0	5.80	0.68
17199799.5	1302814.6	5.80	0.68
17199804.7	1302824.4	5.81	0.70
17199810.7	1302838.9	5.77	0.56
17199817.5	1302855.1	5.89	0.69

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199826.5	1302867.9	5.93	0.74
17199831.5	1302882.4	5.72	0.59
17199836.3	1302895.1	5.55	0.58
17199844.1	1302909.6	5.50	0.71
17199846.4	1302915.6	5.61	0.83
17199846.5	1302923.1	5.68	0.77
17199857.2	1302932.6	5.78	0.90
17199865.3	1302948.1	5.74	0.70
17199870.7	1302962.5	5.80	0.87
17199877.1	1302976.6	5.87	0.81
17199882.5	1302991.4	6.00	0.88
17199889.7	1303005.7	6.00	0.78
17199898.1	1303018.8	5.95	0.94
17199904.6	1303030.1	5.84	1.00
17199908.0	1303043.8	5.72	0.98
17199914.5	1303057.2	5.60	0.88
17199922.3	1303072.7	5.26	0.67
17199928.7	1303085.5	4.97	0.79
17199934.5	1303098.0	4.81	0.87
17199941.1	1303113.1	4.71	0.58
17199948.4	1303126.2	4.69	0.83
17199954.5	1303139.4	4.86	0.68
17199962.1	1303151.0	5.02	0.74
17199966.6	1303165.6	5.08	0.80
17199973.8	1303180.6	4.98	0.95
17199981.8	1303194.7	5.16	0.92
17199987.5	1303207.9	5.03	0.77
17199994.6	1303221.9	5.09	0.93
17200003.1	1303236.3	4.55	0.74
17200004.3	1303248.9	4.06	0.81
17200014.8	1303262.5	3.89	0.82
17200018.9	1303275.5	3.64	0.74
17200022.6	1303285.2	3.45	0.51
17200032.2	1303300.3	3.29	0.73
17200038.3	1303316.6	3.24	0.73
17200044.5	1303329.3	3.33	0.82
17200052.3	1303338.3	3.34	0.51
17200059.8	1303355.1	3.38	0.68
17200064.4	1303369.5	3.37	0.57
17200071.0	1303382.2	3.45	0.49
17200076.7	1303396.6	3.69	0.74
17200085.4	1303410.9	3.69	0.80
17200091.3	1303424.4	3.73	0.86
17200097.3	1303439.2	3.64	0.39

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200104.1	1303451.1	3.83	0.71
17200110.7	1303465.7	3.53	0.46
17200118.5	1303479.5	3.69	0.66
17200122.9	1303491.5	3.67	0.59
17200132.3	1303502.6	3.75	0.53
17200135.5	1303517.4	3.81	0.47
17200143.2	1303531.0	3.89	0.33
17200148.3	1303544.9	4.00	0.63
17200155.9	1303560.2	4.00	0.43
17200162.3	1303574.3	4.08	0.79
17200169.9	1303587.4	4.26	0.84
17200174.5	1303599.0	4.54	0.70
17200180.9	1303612.0	4.24	0.77
17200188.5	1303627.8	4.58	0.76
17200193.6	1303637.2	4.52	0.91
17200199.0	1303651.2	4.65	0.88
17200183.1	1303635.3	4.78	1.02
17200207.0	1303666.7	4.72	0.89
17200214.3	1303676.6	4.85	0.87
17200221.4	1303691.8	4.26	0.52
17200225.3	1303706.1	4.14	0.53
17200232.7	1303718.5	4.29	0.84
17200238.5	1303733.7	4.01	0.40
17200244.6	1303747.0	3.85	0.26
17200253.4	1303761.3	3.18	0.05
17200261.2	1303774.8	3.19	0.13
17200263.7	1303787.4	3.07	0.04
17200271.9	1303801.0	3.14	0.07
17200279.6	1303815.4	3.06	0.13
17200284.3	1303830.4	2.93	0.09
17200291.2	1303838.7	2.84	0.02
17200297.5	1303853.5	2.85	0.06
17200303.7	1303867.2	2.84	0.05
17200311.4	1303881.4	2.97	0.39
17200317.9	1303895.9	2.75	0.30
17200323.7	1303909.6	2.76	0.32
17200330.8	1303924.0	2.68	0.28
17200338.2	1303936.9	2.60	0.20
17200345.4	1303951.4	2.62	0.42
17200350.3	1303963.7	2.58	0.30
17200357.9	1303976.4	2.60	0.40
17200363.8	1303989.8	2.52	0.28
17200369.2	1304002.9	2.30	0.22
17200374.8	1304013.3	2.23	0.19

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200376.3	1304019.8	2.37	0.42
17200381.8	1304033.7	2.41	0.36
17200390.8	1304046.0	2.39	0.33
17200395.4	1304062.1	2.23	0.40
17200404.3	1304071.9	2.14	0.25
17200408.7	1304086.9	2.17	0.17
17200416.7	1304097.3	2.11	0.20
17200422.2	1304111.0	2.13	0.20
17200427.8	1304123.7	2.00	0.22
17200434.1	1304136.7	1.91	0.11
17200440.1	1304149.7	2.14	0.48
17200446.5	1304163.4	1.74	0.19
17200453.7	1304179.5	1.41	0.16
17200457.3	1304187.6	1.23	0.01
17200678.1	1303950.4	1.74	0.53
17200670.5	1303937.3	1.89	0.46
17200664.2	1303924.7	1.95	0.46
17200657.9	1303912.4	2.03	0.34
17200652.4	1303899.1	2.05	0.46
17200646.1	1303885.8	1.95	0.37
17200639.7	1303871.7	2.16	0.30
17200636.6	1303866.1	2.26	0.26
17200630.9	1303856.9	2.34	0.37
17200626.9	1303844.3	2.10	0.29
17200621.5	1303832.5	2.18	0.20
17200613.2	1303817.4	2.21	0.10
17200607.1	1303804.9	2.34	0.35
17200601.2	1303792.2	2.35	0.27
17200593.6	1303776.6	2.43	0.17
17200587.0	1303762.9	2.46	0.23
17200580.1	1303749.4	2.69	0.32
17200573.8	1303735.1	2.97	0.28
17200569.4	1303721.1	3.23	0.33
17200560.3	1303708.6	3.30	0.43
17200552.5	1303695.4	3.46	0.61
17200551.3	1303683.5	3.64	0.68
17200547.0	1303681.1	3.66	0.71
17200541.1	1303668.4	3.91	0.71
17200537.1	1303655.6	3.76	0.67
17200527.1	1303639.6	3.41	0.40
17200522.2	1303627.7	3.35	0.32
17200514.2	1303612.2	3.27	0.23
17200507.3	1303599.7	3.23	0.23
17200502.2	1303585.8	3.24	0.25

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200496.0	1303572.1	3.58	0.59
17200488.7	1303559.4	3.40	0.39
17200481.2	1303547.3	3.52	0.06
17200478.7	1303533.8	3.75	0.17
17200470.2	1303519.8	3.88	0.26
17200463.4	1303508.5	3.77	0.22
17200459.4	1303501.6	3.76	0.16
17200459.3	1303491.2	3.60	-0.04
17200451.7	1303480.7	3.49	0.19
17200444.5	1303468.6	3.43	0.12
17200440.0	1303451.8	3.33	0.15
17200431.7	1303438.5	3.35	0.19
17200422.6	1303424.3	3.41	0.28
17200418.2	1303410.5	3.34	0.37
17200411.7	1303396.8	3.30	0.29
17200406.5	1303382.8	3.35	0.43
17200399.1	1303371.9	3.30	0.35
17200391.0	1303356.9	3.27	0.50
17200384.1	1303340.9	3.61	0.58
17200380.4	1303330.3	3.30	0.40
17200372.4	1303319.2	3.31	0.35
17200371.1	1303317.1	3.35	0.38
17200365.3	1303305.7	3.25	0.39
17200362.1	1303290.4	3.25	0.28
17200353.3	1303276.3	3.19	0.44
17200349.8	1303265.4	3.20	0.28
17200341.4	1303249.3	3.51	0.67
17200334.2	1303235.8	3.39	0.45
17200328.2	1303222.3	3.39	0.38
17200321.3	1303209.0	3.31	0.29
17200313.7	1303195.1	3.26	0.41
17200308.2	1303179.6	3.15	0.43
17200303.1	1303169.2	3.05	0.37
17200296.4	1303156.3	2.89	0.51
17200289.2	1303142.9	2.80	0.49
17200286.8	1303135.2	2.82	0.33
17200281.7	1303128.3	2.83	0.46
17200276.2	1303116.0	2.86	0.51
17200270.6	1303101.7	2.96	0.17
17200263.5	1303087.2	3.14	0.20
17200257.8	1303074.6	2.92	0.24
17200249.3	1303059.2	3.02	0.27
17200242.4	1303043.6	3.09	0.18
17200234.6	1303029.6	3.20	0.29

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200230.0	1303015.4	3.45	0.32
17200225.5	1303005.1	3.42	0.14
17200217.6	1302991.9	3.49	0.27
17200210.7	1302979.0	3.45	0.07
17200203.7	1302966.2	3.96	0.49
17200199.7	1302952.8	4.19	0.66
17200197.3	1302948.2	4.36	0.83
17200192.4	1302937.5	4.56	0.79
17200184.7	1302923.0	4.66	0.83
17200180.3	1302912.5	4.80	1.02
17200171.3	1302897.7	5.14	1.26
17200166.6	1302887.3	5.27	0.16
17200158.8	1302871.6	5.52	-0.27
17200152.9	1302859.2	5.68	-0.44
17200144.9	1302845.4	5.92	-0.04
17200139.7	1302830.5	6.08	-0.05
17200134.1	1302816.8	6.25	0.39
17200128.0	1302804.6	6.25	0.65
17200121.3	1302791.0	6.23	0.14
17200113.0	1302775.0	6.21	0.12
17200106.2	1302763.9	6.21	0.12
17200100.5	1302749.5	5.87	0.17
17200092.6	1302736.4	5.70	0.23
17200086.6	1302721.0	5.57	0.26
17200079.0	1302705.1	5.54	0.33
17200074.4	1302694.4	5.57	0.85
17200066.9	1302681.7	5.16	0.47
17200060.3	1302669.5	5.17	0.57
17200055.1	1302654.6	4.98	0.76
17200049.3	1302642.7	4.72	0.52
17200043.6	1302627.8	4.58	0.61
17200037.6	1302614.5	4.22	0.34
17200028.9	1302600.1	4.43	0.27
17200021.2	1302587.7	4.37	0.55
17200017.3	1302572.7	4.13	0.75
17200010.4	1302559.6	3.99	0.68
17200004.0	1302544.0	3.86	0.70
17199995.4	1302534.3	3.98	0.52
17199990.9	1302518.7	3.81	0.37
17199984.2	1302505.9	3.68	0.43
17199977.2	1302489.2	3.38	0.17
17199969.5	1302476.3	3.25	-0.04
17199964.5	1302462.5	3.26	0.41
17199956.9	1302450.9	3.35	0.22

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199950.6	1302436.4	3.21	0.36
17199946.1	1302422.7	2.89	0.25
17199939.1	1302410.2	2.65	-0.38
17199934.0	1302402.0	2.60	0.22
17199932.1	1302395.9	2.61	0.14
17199927.8	1302383.7	2.71	0.53
17199921.2	1302369.8	2.44	0.27
17199915.1	1302355.7	2.28	0.41
17199906.8	1302343.3	2.30	0.29
17199898.9	1302329.5	2.25	0.34
17199892.9	1302319.4	2.20	0.44
17199888.2	1302302.1	2.31	0.17
17199880.4	1302291.5	3.01	0.34
17199875.3	1302287.0	3.07	1.17
17199874.4	1302283.0	1.61	-0.29
17200152.0	1302157.8	1.75	0.32
17200155.8	1302168.1	1.93	-0.76
17200158.9	1302173.6	2.97	0.27
17200163.9	1302187.4	1.21	-0.12
17200170.1	1302200.8	1.41	0.16
17200178.3	1302217.3	1.47	0.27
17200184.0	1302229.6	1.89	0.43
17200190.5	1302243.6	1.82	0.14
17200196.2	1302255.4	1.89	0.11
17200202.2	1302268.8	2.11	0.18
17200207.8	1302284.1	2.29	0.19
17200214.1	1302298.7	2.39	0.42
17200225.5	1302311.7	2.15	0.09
17200230.7	1302326.1	2.18	0.07
17200236.7	1302337.3	2.13	0.12
17200242.2	1302350.0	2.21	0.05
17200248.4	1302363.6	2.26	0.09
17200255.4	1302377.2	2.40	0.21
17200263.6	1302391.0	2.44	0.23
17200266.9	1302404.1	2.50	0.22
17200276.1	1302416.0	2.52	0.18
17200281.1	1302429.7	2.48	0.18
17200289.0	1302443.4	2.70	0.17
17200295.0	1302459.7	2.92	0.46
17200302.0	1302471.6	3.11	0.37
17200307.1	1302487.5	3.20	0.08
17200314.3	1302500.2	3.25	0.24
17200321.6	1302513.2	3.37	-0.78
17200328.4	1302526.8	3.49	-0.35

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200329.2	1302532.9	3.59	-0.68
17200334.7	1302541.5	3.79	-0.13
17200341.6	1302556.2	3.93	-0.12
17200346.9	1302567.0	3.90	-0.04
17200353.5	1302579.5	3.90	0.37
17200358.5	1302593.5	4.02	0.62
17200364.0	1302607.1	3.90	0.47
17200370.9	1302620.9	3.93	0.36
17200378.0	1302634.7	3.87	-0.03
17200384.6	1302648.6	3.84	-0.39
17200391.5	1302661.9	3.78	-0.77
17200397.3	1302675.3	3.82	-0.10
17200403.8	1302688.9	3.59	0.07
17200410.6	1302701.4	3.64	-0.21
17200417.2	1302716.6	3.66	0.04
17200425.7	1302731.0	3.71	-0.04
17200430.3	1302744.6	3.70	0.02
17200438.3	1302755.2	3.57	0.19
17200443.6	1302769.1	3.50	0.08
17200451.9	1302782.6	3.50	-0.07
17200455.8	1302797.8	3.62	-0.30
17200462.4	1302809.2	3.74	0.03
17200469.8	1302822.0	3.70	-0.24
17200475.1	1302836.2	3.68	-0.29
17200482.7	1302850.0	3.70	-0.14
17200487.5	1302865.4	3.80	-0.55
17200497.0	1302879.5	3.79	0.10
17200502.7	1302893.7	3.71	0.69
17200507.2	1302903.5	3.59	0.77
17200508.0	1302907.7	3.59	0.70
17200515.6	1302920.9	3.60	0.70
17200522.1	1302934.2	3.47	0.57
17200528.3	1302946.0	3.50	0.60
17200531.7	1302959.6	3.43	0.44
17200539.4	1302974.0	3.36	0.42
17200547.1	1302988.2	3.04	0.41
17200555.3	1303001.3	2.90	0.40
17200560.1	1303014.2	2.53	0.16
17200566.5	1303026.7	2.60	0.29
17200573.7	1303039.3	2.58	0.42
17200579.5	1303055.6	2.38	0.16
17200585.9	1303068.5	2.22	0.00
17200592.0	1303084.0	3.43	0.60
17200593.5	1303088.2	3.47	0.42

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200600.1	1303099.0	3.54	0.40
17200606.6	1303110.3	3.72	0.59
17200611.8	1303124.0	2.87	-0.45
17200615.5	1303133.2	2.22	-0.32
17200625.5	1303146.0	2.91	-0.02
17200631.3	1303162.7	4.12	0.70
17200640.2	1303176.1	3.64	0.31
17200646.5	1303188.0	3.16	0.59
17200649.9	1303201.4	2.60	0.48
17200656.3	1303215.9	2.10	0.27
17200665.6	1303229.0	1.83	0.28
17200674.0	1303244.3	1.86	0.22
17200680.0	1303255.8	2.14	0.47
17200686.1	1303268.8	2.79	0.49
17200691.1	1303285.5	2.63	0.28
17200698.7	1303298.1	2.70	0.40
17200706.8	1303312.6	2.64	0.51
17200712.0	1303328.5	2.25	0.34
17200713.6	1303337.9	2.19	0.27
17200724.6	1303352.9	2.27	0.28
17200731.0	1303364.9	2.15	0.19
17200737.2	1303379.7	2.02	0.20
17200742.0	1303392.5	2.00	0.12
17200748.4	1303405.1	2.19	0.21
17200754.7	1303418.7	2.15	0.04
17200761.0	1303435.9	2.20	0.13
17200769.5	1303446.0	2.12	-0.03
17200772.5	1303453.0	1.94	-0.14
17200776.8	1303462.6	2.01	-0.04
17200779.3	1303474.0	2.08	0.03
17200789.6	1303483.8	2.11	0.03
17200797.2	1303495.7	2.10	-0.09
17200800.4	1303511.6	2.25	0.07
17200808.1	1303525.0	2.49	0.06
17200813.6	1303539.9	2.77	0.28
17200820.1	1303553.7	2.66	0.19
17200826.7	1303567.5	2.67	0.29
17200832.8	1303582.9	2.90	0.27
17200839.1	1303597.9	2.10	-0.03
17200846.8	1303608.4	2.10	0.04
17200854.5	1303614.3	2.38	-0.06
17200862.6	1303637.0	2.02	0.07
17200869.1	1303650.8	1.87	-0.07
17200876.3	1303665.7	1.83	-0.03

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200882.4	1303680.2	2.05	0.14
17200890.7	1303694.1	1.98	0.22
17200896.3	1303708.8	1.81	-0.01
17200905.3	1303723.7	1.89	0.16
17200911.6	1303738.4	1.74	0.11
17200915.2	1303751.8	1.58	0.20
17200921.0	1303765.7	1.84	0.44
17200924.5	1303773.1	1.39	0.22
17200963.7	1303665.9	3.25	0.38
17200878.8	1302982.6	0.89	-0.49
17200886.7	1302995.2	0.79	-0.59
17200892.0	1303007.0	0.79	-0.60
17200867.5	1302969.4	0.86	-0.51
17200862.0	1302957.1	1.25	-0.44
17200858.7	1302944.5	1.45	0.20
17200857.6	1302940.9	1.30	0.04
17200851.6	1302928.3	1.94	0.50
17200845.1	1302916.2	2.37	0.55
17200841.6	1302901.5	2.19	0.22
17200836.5	1302885.9	2.46	0.14
17200823.1	1302873.8	2.45	-0.38
17200818.1	1302860.1	2.66	-0.27
17200812.5	1302845.1	2.63	-1.00
17200809.4	1302834.5	2.54	-0.72
17200800.1	1302821.9	2.70	-0.56
17200793.6	1302806.1	2.91	-0.27
17200788.8	1302794.3	3.12	0.12
17200781.0	1302780.4	3.16	0.33
17200773.0	1302766.7	2.99	0.45
17200770.6	1302764.5	2.98	0.44
17200765.9	1302750.9	2.90	0.24
17200759.9	1302737.8	3.43	0.61
17200754.4	1302725.3	3.33	0.68
17200749.2	1302713.9	3.33	0.33
17200741.1	1302701.2	3.26	0.10
17200736.8	1302684.7	3.18	-0.02
17200731.3	1302670.6	3.08	0.04
17200721.6	1302661.0	3.10	-0.24
17200715.2	1302644.1	3.25	-0.05
17200707.0	1302630.9	3.10	-0.08
17200701.6	1302618.1	3.10	-0.13
17200696.3	1302604.3	3.06	0.37
17200690.3	1302588.7	2.82	0.18
17200684.6	1302576.7	2.61	0.11

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17200682.0	1302572.9	2.58	-0.04
17200675.1	1302562.8	2.37	-0.11
17200669.4	1302552.3	2.54	0.22
17200665.2	1302537.1	2.65	0.36
17200657.4	1302526.6	2.40	0.00
17200650.3	1302509.0	2.39	0.02
17200646.2	1302496.0	2.39	0.20
17200639.7	1302482.2	2.21	-0.08
17200630.4	1302468.0	2.01	-0.48
17200623.0	1302453.4	2.15	-0.72
17200615.3	1302440.9	2.24	-0.74
17200611.0	1302426.5	2.10	-1.17
17200603.9	1302411.8	2.08	-1.08
17200599.6	1302401.0	2.26	-0.10
17200597.1	1302393.9	2.27	-0.10
17200594.2	1302387.9	2.57	0.19
17200588.4	1302374.9	2.25	0.39
17200581.0	1302362.8	1.82	0.19
17200575.4	1302347.9	1.35	-0.18
17200565.8	1302334.2	1.39	-0.03
17200559.5	1302321.6	1.43	-0.14
17200552.5	1302307.1	1.47	-0.10
17200545.9	1302295.6	1.53	0.01
17200540.7	1302279.4	1.43	-0.27
17200533.7	1302267.4	1.54	-0.05
17200527.2	1302253.0	1.48	-0.04
17200518.7	1302239.0	1.53	-0.03
17200516.2	1302234.0	1.55	-0.13
17200512.1	1302225.2	1.64	-0.31
17200508.4	1302214.3	1.55	-0.36
17198263.1	1302384.7	2.23	0.30
17198269.2	1302398.8	2.08	0.17
17198274.0	1302410.8	1.99	0.26
17198281.6	1302424.2	2.29	0.66
17198286.0	1302438.9	2.42	0.65
17198295.7	1302451.0	2.54	0.64
17198299.3	1302466.1	2.59	0.47
17198306.1	1302477.8	2.64	0.57
17198310.9	1302487.0	2.76	0.69
17198314.1	1302495.0	2.82	0.57
17198321.5	1302510.1	3.08	0.33
17198324.0	1302518.9	3.19	0.83
17198329.1	1302530.9	2.34	0.64
17198544.2	1302839.6	2.36	-0.91

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17198562.2	1302843.3	2.04	-1.01
17198550.7	1302842.5	3.69	0.42
17198560.7	1302324.8	2.11	0.34
17198571.9	1302333.4	3.03	0.50
17198577.3	1302349.0	2.88	-0.01
17198585.5	1302360.9	3.34	0.34
17198589.6	1302377.1	3.22	0.20
17198598.3	1302390.4	3.13	0.38
17198604.1	1302404.2	2.99	0.27
17198610.9	1302416.8	2.76	0.39
17198618.5	1302432.1	2.90	0.21
17198621.0	1302437.6	2.91	0.32
17198624.3	1302444.4	2.75	0.23
17198629.9	1302458.2	2.85	0.34
17198636.6	1302470.6	2.79	0.27
17198642.2	1302481.6	2.73	0.25
17198648.2	1302494.5	2.83	0.36
17198656.0	1302509.0	2.88	0.24
17198663.6	1302523.6	2.99	0.49
17198669.8	1302538.0	3.08	0.40
17198676.2	1302552.5	3.04	0.13
17198681.1	1302565.9	3.16	0.50
17198686.2	1302581.5	3.03	0.31
17198694.3	1302594.2	2.86	0.26
17198702.5	1302608.0	2.93	0.34
17198710.0	1302618.1	2.90	0.40
17198715.7	1302634.4	2.94	0.26
17198721.5	1302648.2	3.16	0.34
17198728.5	1302662.3	3.21	0.41
17198733.3	1302675.3	3.16	0.40
17198738.3	1302689.7	3.11	0.33
17198746.9	1302700.7	3.01	0.40
17198753.8	1302718.3	3.00	0.45
17198757.2	1302729.5	2.99	0.44
17198764.9	1302741.6	2.93	0.32
17198772.3	1302754.8	2.99	0.47
17198778.6	1302769.9	2.91	0.47
17198784.5	1302783.4	2.83	0.30
17198792.4	1302798.3	2.68	0.33
17198795.2	1302806.9	2.78	0.29
17198799.5	1302812.2	2.82	0.37
17198807.4	1302823.9	2.81	0.33
17198811.4	1302836.2	2.74	0.25
17198817.3	1302851.1	2.71	0.16

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17198823.6	1302864.0	2.72	0.11
17198828.9	1302875.5	2.75	0.33
17198837.5	1302888.1	2.69	0.03
17198840.7	1302900.0	2.81	0.22
17198850.5	1302915.9	2.77	0.09
17198855.6	1302929.9	2.86	0.16
17198861.9	1302944.4	2.83	0.23
17198867.9	1302956.1	2.79	0.46
17198873.1	1302965.1	2.62	0.47
17198878.9	1302975.7	2.06	-0.06
17198880.2	1302980.9	1.89	0.39
17198880.9	1302969.1	2.34	0.22
17199414.8	1303493.2	3.83	0.29
17199451.9	1303671.9	3.30	0.30
17199601.9	1303786.7	2.50	0.19
17199607.0	1303800.5	2.04	0.35
17199615.3	1303815.6	1.73	0.20
17199619.6	1303828.6	1.55	0.14
17199627.0	1303844.3	1.66	0.27
17199633.8	1303854.7	1.53	0.23
17199638.6	1303868.7	1.48	0.29
17199646.3	1303881.1	1.22	0.20
17199649.9	1303892.9	0.92	-0.20
17199643.9	1303890.6	0.94	-0.18
17199647.2	1303794.5	2.87	0.24
17199740.5	1303671.5	3.53	0.46
17199622.4	1303681.6	3.29	0.35
17199594.3	1303774.3	2.95	0.63
17199589.2	1303761.1	2.77	0.49
17199580.9	1303748.1	2.96	0.56
17199575.6	1303732.7	3.16	0.41
17199567.2	1303718.2	3.12	0.47
17199561.4	1303705.0	3.13	0.46
17199555.8	1303692.3	3.05	0.38
17199546.1	1303679.3	3.15	0.47
17199541.1	1303664.2	3.26	0.62
17199535.9	1303652.3	3.45	0.66
17199533.0	1303635.7	3.66	0.67
17199520.9	1303626.5	3.70	0.60
17199515.9	1303611.5	3.85	0.76
17199511.1	1303601.5	3.75	0.31
17199509.2	1303599.8	3.71	0.27
17199502.2	1303583.1	3.57	0.41
17199498.2	1303568.5	3.51	0.46

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199490.1	1303558.2	3.46	0.51
17199483.7	1303545.0	3.44	0.53
17199476.9	1303530.8	3.47	0.36
17199471.9	1303515.8	3.65	0.29
17199467.2	1303500.8	3.73	0.23
17199459.1	1303490.1	3.62	0.46
17199452.5	1303476.7	3.77	0.38
17199445.3	1303462.5	3.83	0.32
17199455.2	1303492.9	3.63	0.46
17199435.8	1303449.7	3.96	0.50
17199429.7	1303435.5	4.03	0.43
17199417.4	1303419.2	3.94	0.35
17199418.2	1303410.4	3.98	0.35
17199412.6	1303394.4	4.04	0.50
17199405.6	1303381.7	3.58	0.11
17199400.1	1303368.2	3.53	-0.19
17199390.9	1303354.3	3.75	0.35
17199385.2	1303342.0	3.73	0.33
17199380.0	1303327.7	3.81	0.54
17199373.0	1303314.2	3.79	0.41
17199366.8	1303300.7	3.72	0.46
17199361.0	1303286.8	3.75	0.46
17199354.6	1303273.9	4.00	0.51
17199346.7	1303261.1	3.95	0.44
17199338.5	1303244.8	4.21	0.41
17199336.2	1303232.8	4.08	0.62
17199336.8	1303229.8	4.08	0.62
17199327.0	1303219.9	3.91	0.49
17199320.7	1303207.4	3.88	0.28
17199315.2	1303190.9	4.09	0.28
17199307.4	1303177.8	4.07	0.20
17199302.2	1303163.2	3.94	0.33
17199296.1	1303151.5	3.55	0.33
17199289.4	1303137.1	3.41	0.36
17199284.4	1303122.4	3.32	0.36
17199275.5	1303109.2	3.33	0.40
17199265.0	1303099.5	3.15	0.09
17199260.9	1303083.4	2.92	-0.72
17199256.4	1303071.4	3.19	-0.24
17199250.7	1303056.8	3.17	0.11
17199247.4	1303048.1	3.23	0.17
17199247.5	1303039.7	3.30	0.29
17199238.9	1303031.6	3.32	0.14
17199231.2	1303014.5	3.52	0.19

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17199227.2	1303000.6	3.56	0.32
17199218.6	1302990.5	3.51	0.07
17199212.6	1302978.3	3.51	0.23
17199205.7	1302961.1	3.70	0.51
17199199.2	1302947.2	3.58	0.23
17199193.1	1302934.1	3.51	0.23
17199183.6	1302919.3	3.41	0.46
17199176.1	1302905.2	3.30	0.25
17199172.6	1302891.9	2.97	0.15
17199164.3	1302877.3	2.93	0.11
17199156.9	1302866.1	2.96	0.23
17199151.4	1302849.4	2.99	0.35
17199146.6	1302838.1	3.02	0.36
17199137.7	1302823.4	3.11	0.29
17199129.2	1302812.4	3.06	0.46
17199119.9	1302802.1	3.20	0.43
17199119.8	1302782.4	3.24	0.63
17199115.2	1302768.0	3.30	0.47
17199107.8	1302756.3	3.33	0.60
17199101.1	1302742.5	3.34	0.62
17199100.1	1302727.8	3.31	0.58
17199089.4	1302712.5	3.25	0.49
17199092.3	1302700.8	3.10	0.35
17199072.9	1302693.7	3.13	0.27
17199065.3	1302683.1	3.08	0.39
17199061.6	1302662.1	3.27	0.40
17199055.0	1302649.5	3.18	0.42
17199047.1	1302636.2	3.28	0.54
17199041.9	1302623.3	3.15	0.45
17199035.8	1302606.6	3.02	0.40
17199029.2	1302593.2	2.94	0.34
17199021.0	1302580.3	3.04	0.27
17199015.2	1302569.2	3.07	0.44
17199008.6	1302551.8	3.10	0.38
17199004.8	1302538.2	3.06	0.25
17199002.7	1302523.5	3.04	0.24
17198991.2	1302510.7	2.92	0.10
17198983.6	1302498.4	2.89	0.41
17198977.8	1302486.0	3.07	0.23
17198980.4	1302479.5	3.06	0.22
17198970.2	1302474.8	2.98	0.12
17198962.5	1302461.3	3.13	0.11
17198953.4	1302446.6	2.96	0.14
17198948.3	1302432.7	3.14	0.24

Table A-4
Elbow BU Topographic Data

Northing (feet)	Easting (feet)	Elevation (feet NAVD88)	Delta Value (feet)
17198944.0	1302420.6	3.11	0.25
17198939.7	1302410.9	3.20	0.36
17198938.3	1302405.4	1.91	0.61
17198847.8	1302388.6	2.72	0.21

Notes:
1. Northing, easting, and elevation were obtained from Anchor QEA's 2025 post-construction monitoring event.
2. Horizontal Datum: NAD83 State Plane South (U.S. foot)
3. Vertical Datum: NAVD88 (U.S. foot)
4. Delta values were determined by subtracting the elevation from the nearest survey point recorded during the as-built survey to each Anchor QEA survey point. Delta values were only determined for Anchor QEA survey points when there was an associated as-built survey point within 20 feet.
--: no as-built survey point identified within 20 feet of the Anchor QEA survey point
BU: beneficial use
NAD83: North American Datum of 1983
NAVD88: North American Vertical Datum of 1988

Appendix B
Marsh Vegetation Quadrat Survey Field Data Sheets

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

ANCHOR QEA

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 9/5/2025

Weather Conditions: Partly cloudy, mid 90's (°F), 10-20mph SSE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD4	T1Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T1Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T1Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T2Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T2Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T2Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T2Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T3Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T3Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T3Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T3Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T3Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
3. The average basal height for each species is determined by selecting a single plant of the specified species that appears to represent the mean basal height of all plants of the specified species across the entire quadrat. The basal height of the selected plant is then measured in centimeters from the substrate to the top of the highest part of the plant.

Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project
Date: 9/5/2025
Weather Conditions: Partly cloudy, mid 90's (°F), 10-20mph SSE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD4	T4Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T4Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T4Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T5Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD4	T2Q04a	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
3. The average basal height for each species is determined by selecting a single plant of the specified species that appears to represent the mean basal height of all plants of the specified species across the entire quadrat. The basal height of the selected plant is then measured in centimeters from the substrate to the top of the highest part of the plant.

Abbreviation:
cm – centimeter
FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 9/9/2025

Weather Conditions: Partly cloudy, mid 90's (°F), 5-15mph shifting E-N

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD3	T1Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T2Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T2Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T3Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T3Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T3Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T4Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T4Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T4Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T5Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T5Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T5Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
3. The average basal height for each species is determined by selecting a single plant of the specified species that appears to represent the mean basal height of all plants of the specified species across the entire quadrat. The basal height of the selected plant is then measured in centimeters from the substrate to the top of the highest part of the plant.

Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 9/10/2025

Weather Conditions: Partly cloudy, mid 90's (°F), 5-15mph shifting E-N

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD3	T5Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T5Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T5Q06	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T6Q06	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T7Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T7Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T7Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
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Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

ANCHOR QEA

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 9/10/2025

Weather Conditions: Partly cloudy, mid 90's (°F), 5-15mph shifting E-N

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD3	T7Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T7Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T7Q06	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q02	36	18	15	7	10	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T8Q06	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T9Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T9Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T9Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
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Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 9/10/2025

Weather Conditions: Partly cloudy, mid 90's (°F), 5-15mph shifting E-N

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BUD3	T9Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T9Q05	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T10Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T10Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T10Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T10Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T11Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T11Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T11Q03	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BUD3	T4Q04	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
2. Frequency of occurrence for each species across the quadrat is determined by dividing the number of intersections between the string and the specificized plant species by the total number of intersections (25).
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Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project

Date: 10/6/2025

Weather Conditions: Mostly cloudy, mid 80's (°F), 0-15mph shifting NNW-ESE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Batis maritima*		Dominant Species:		Dominant Species:		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
BWM2	T1Q01	36	25	20	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T2Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T2Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T3Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T3Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T4Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T4Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T5Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T6Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T7Q01	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A
BWM2	T7Q02	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A	0	N/A

Notes:

1. Percent coverage across the quadrat is determined by dividing the number of cells containing living plants by the total number of cells (36).
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Abbreviation:

cm – centimeter

FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

ANCHOR QEA

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project
Date: 10/8/2025
Weather Conditions: Mostly cloudy, mid 80's (°F), 5-15mph E-NE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species:		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	T1Q01	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T1Q02	36	25	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T1Q03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T2Q05	36	20	15	5	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T2Q06	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T2Q07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T2Q08	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T2Q05a	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q01	33	N/A	N/A	N/A	N/A	21	2	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q02	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q04	35	N/A	N/A	N/A	N/A	24	2	N/A	N/A	N/A	N/A	N/A

Notes:

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Abbreviation:
cm – centimeter
FOR – Frequency of Occurrence

1217 Business Hwy 35 S
Rockport, Texas 78382
361.729.1241

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project
Date: 10/8/2025
Weather Conditions: Mostly cloudy, mid 80's (°F), 5-15mph E-NE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species: *Heliotropium curassavicum*		Dominant Species:		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	T3Q05	14	N/A	N/A	N/A	N/A	8	2	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q06	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q08	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T3Q09	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q01	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q02	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q04	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q05	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q06	11	N/A	N/A	N/A	N/A	N/A	N/A	7	5	N/A	N/A	N/A
Elbow BU	T4Q07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project
Date: 10/7/2025
Weather Conditions: Mostly cloudy, mid 80's (°F), 5-15mph ESE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species: *Heliotropium curassavicum*		Dominant Species: *Sporobolus indicus*		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	T4Q08	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q09	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T4Q10	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q01	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q02	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q03	28	N/A	N/A	N/A	N/A	17	1	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q04	22	N/A	N/A	N/A	N/A	N/A	N/A	10	4	4	2	N/A
Elbow BU	T5Q05	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q06	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q08	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T5Q09	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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361.729.1241

ANCHOR QEA

Marsh Vegetation Quadrat Survey Field Datasheet

Project: Nueces Delta Restoration Project
Date: 10/7/2025
Weather Conditions: Mostly cloudy, mid 80's (°F), 5-15mph ESE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species: *Heliotropium curassavicum*		Dominant Species: *Sporobolus indicus*		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	T7Q02	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q04	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q05	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q06	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T7Q08	36	N/A	N/A	25	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T8Q01	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T8Q02	16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11	3	N/A
Elbow BU	T8Q03	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T8Q04	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	T8Q05	36	N/A	N/A	25	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Date: 10/7/2025
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Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species: *Heliotropium curassavicum*		Dominant Species: *Sporobolus indicus*		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	AQ01	36	N/A	N/A	N/A	N/A	23	1	N/A	N/A	2	2	N/A
Elbow BU	AQ02	34	N/A	N/A	22	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	AQ03	36	N/A	N/A	N/A	N/A	23	1	N/A	N/A	N/A	N/A	N/A
Elbow BU	AQ04	36	N/A	N/A	N/A	N/A	21	2	N/A	N/A	N/A	N/A	N/A
Elbow BU	AQ05	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	3	N/A
Elbow BU	AQ06	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Elbow BU	AQ07	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Project: Nueces Delta Restoration Project

Date: 10/7/2025

Weather Conditions: Mostly cloudy, mid 80's (°F), 5-15mph ESE

General Site Notes:

Placement Area	Observation Point ID	% Coverage of Quadrat (36/36)[1]	Dominant Species: *Salicornia virginica*		Dominant Species: *Batis maritima*		Dominant Species: *Sesuvium portulacastrum*		Dominant Species: *Suaeda linearis*		Dominant Species: *Avicennia germinans*		Quadrat Notes:
			# Individuals & FOR (X/25)[2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm) [3]	# Individuals & FOR (X/25) [2]	Average Basal Height (cm)[3]	# Individuals & FOR (X/25) [2]	Average Basal Height(cm)[3]	
Elbow BU	T7Q01a	28	1	4	N/A	N/A	16	2	1	2	N/A	N/A	N/A
Elbow BU	T8Q06	36	9	15	8	20	N/A	N/A	N/A	N/A	8	40	N/A

Notes:

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