COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
FINAL MINUTES OF PUBLIC MEETING – JANUARY 30, 2025

MEMBERS PRESENT:

Jack Chapin* (Designee of Christopher Mason, Acting Director of Environmental Law Enforcement)
Justin Malcolm* (Designee of Brona Simon, State Archaeologist)
Vincent Malkoski (Gubernatorial Appointee, Dive Community Representative [organization])
Graham McKay* (Gubernatorial Appointee, Marine Archaeologist [at-large)
Jonathan Patton* (Designee of Gregory Robbins, Director of DCR Division of Waterways)
Daniel Sampson* (Designee of Alison Brizius, Director of Coastal Zone Management)
John Warner* (State Archivist)
(*present via remote access)

David Robinson, Director (Staff for the Board)
Patrice Bordonaro, CZM Staff Assistant/Meeting Co-Host

MEMBERS ABSENT:

Jack Chapin (Designee of Shaun Santos, Director of Environmental Law Enforcement)
Designee of Brona Simon (Executive Director, Massachusetts Historical Commission)
VACANT (Gubernatorial Appointee, Dive Community Representative [at-large])

PROCEEDINGS:

This hybrid-format (i.e., in-person and remote-access) public meeting of the Massachusetts Board of Underwater Archaeological Resources (the Board or BUAR) was convened by its Director, David Robinson (Dave R), at 12:32 PM on January 30, 2025 in the 9th floor conference room #9128 at 100 Cambridge Street, Suite 900, in Boston, with a quorum of six (6) current members of the Board in attendance remotely, as confirmed by a roll-call.

The purpose of this public meeting was to conduct the BUAR's business that required the involvement of the full Board.

Items on the agenda included:

- approval of the December 5, 2024 Board meeting's minutes
- the Director's report
- Board Member reports
- a summary of the Board's Public Engagement Activities
- Old Business, and
- New Business.

Dave R explained that this meeting's hybrid format conformed with the Commonwealth's temporary provisions (effective through March 31, 2025) pertaining to the Open Meeting Law that were signed by Governor Healey on March 29, 2023. These temporary provisions allow public bodies to continue holding their meetings remotely without a quorum of the public body physically present at a meeting location, and to provide "adequate, alternative" access to remote meetings. Board votes taken during this hybrid-format meeting were conducted through a roll-call, as required by MGL c. 30A, ss. 18-25.

Meeting ground-rules were reviewed, the presence of CZM Staff Assistant/Meeting Co-Host, Patrice Bordonaro, was noted, and Board members, prospective permittees, and members of the public were all welcomed to the meeting by Dave R.

1. MINUTES

A. Minutes of the December 5, 2024 Meeting of the Board

Dave R asked if the Board had any comments or corrections to the draft minutes of the Board's December 5, 2024 public meeting. There were no comments or corrections to the minutes.

Graham McKay moved to accept the minutes of the Board's December 5, 2024 public meeting. Justin Malcolm seconded. Unanimous in favor by a roll-call vote. So voted.

2. DIRECTOR'S REPORT

A. Fieldwork

- ***Chelsea Creek Shipwreck Site Push-Core Sampling, Revere***

On January 10, 2025, the Board's staff, accompanied by citizen scientists, Noah Robinson (Dave R's son) and Steven Kurkjian, conducted fieldwork at the Chelsea Creek shipwreck site in Revere. This fieldwork was conducted to obtain small (1-inch diameter) push-core samples from inside of the shipwreck's intact lower-hull remains to determine the presence or absence of archaeological evidence of the ship having been burned (i.e., a charcoal stratigraphic layer, charcoal fragments, or charred wood hull fragments).

Mr. Kurkjian and his associates have hypothesized that these vessel remains in Chelsea Creek are those of HMS *Diana*, which was captured and burned during the May 27-28, 1775 Revolutionary War "Battle of Chelsea Creek." This Battle is historically significant as it represented the first victory for the "United Colonies" and the first naval engagement of the American Revolution. The Battle of Chelsea Creek was the subject of a National Park Service's "American Battlefield Protection Program"-funded study that BUAR conducted in 2009. This study utilized historical records and GIS technology to reconstruct battle events and the historic landscape to define and interpret the battlefield and narrow the search area for the remains of HMS *Diana*.

Based on the results from BUAR's 2009 Chelsea Creek battlefield study, the location of the Chelsea Creek shipwreck does not comport with what the study concluded was HMS *Diana*'s position (i.e., just east of the confluence of Chelsea Creek and the Mystic River) when it was destroyed by burning by American forces. Further, the 100-foot measured length of the Chelsea Creek shipwreck's preserved keelson (documented by the late, long-time BUAR permittee and citizen scientist, James Karos) is nearly twice as long as the expected length (about 50-60 foot-long on-deck) of a vessel of HMS *Diana*'s estimated size. This size estimate was based on comparisons to historical descriptions of other vessels of HMS *Diana*'s reported period of construction, rig, tonnage, armament, and crew-size (i.e., a late 18th century, New England-built, un-rated schooner of 120-tons, that was lightly-armed with four [4-lbr] cannon and 12-swivel guns, with a 30-man crew). It is also based on the expert opinion of five marine archaeologists – the Board's Chief Archaeologist and Director (Dave R), the Board's (at large) Marine Archaeologist member (Graham McKay), and three outside maritime archaeologists (Drs. Kathy Abbas, Kevin Crisman, and Warren Riess), who the Board's staff consulted individually for their independent opinions. Drs. Abbas, Crisman, and Riess all specialize in eighteenth- and early-nineteenth-century North American ship construction and are considered leading experts in the field. Unlike the New England-built HMS *Diana*, a New England-built vessel of this period with a 100-foot-long keelson would likely be around the same size as, or maybe a bit larger than, the smallest rated British warship of the era, which was a termed a "Sixth-Rate." A Sixth-Rate British warship

contemporary with HMS *Diana* was typically a two-decked, 24-gun, 450- to 550-ton vessel, with a complement of around 150 men, and would have measured about 115 feet on-deck.

While there is strong evidence that the Chelsea Creek shipwreck is not HMS *Diana*, the Board's staff is, nonetheless, working with Mr. Kurkjian and his associates to obtain additional evidence to arrive at a conclusive determination through a "weight-of-evidence" scientific approach that examines the question from multiple angles using different lines of evidence.

Utilizing this weight-of-evidence approach, the Board's staff (with assistance from BUAR Board member, Graham McKay, and Mr. Kurkjian) obtained six cross-sectional wood samples of the hull's lowermost framing timbers, or "floors" from the shipwreck during the Fall of 2023, so that they could be sent to Columbia University's Lamont-Doherty Earth Lab (Lamont-Doherty) for dendrochronological dating. Radiocarbon dating would have been the preferred dating method, but the Chelsea Creek shipwreck is located near creek-side oil and gas shipment and storage facilities, so the potential for hydrocarbon contamination of the shipwreck's hull timbers from the surrounding sediments was a concern. The dendrochronological dating effort by Lamont-Doherty was conducted during the Spring/Summer 2024 and was funded by Mr. Kurkjian and his associates. Unfortunately, the dendrochronological dating effort proved inconclusive, due to the Lab not having a tree-ring match in their library of dated samples to the sampled Chelsea Creek shipwreck timbers. Further complicating dating was the wood's condition and the relatively small number of samples (6) that could be collected from the exposed portions of the shipwreck.

This weight-of-evidence approach is also why the Board's staff conducted push-coring within the shipwreck on January 10, 2025. Historical records of the Battle of Chelsea Creek indicate HMS *Diana* was destroyed by burning. If the Chelsea Creek shipwreck is the burned HMS *Diana*, archaeological evidence of this destructive fire (e.g., charred timber surfaces and a layer of charcoal that would have settled inside the lowest part of the vessel's hull, between its floors) should be present. Dave R noted that such evidence of burning was found during the BUAR-permitted archaeological investigations that he conducted on two shipwrecks that were among the dozens of vessels burned at anchor in New Bedford Harbor by British forces during the Revolutionary War.

The push-core sampling that was done by the Board's staff involved taking five, one-inch diameter, split-spoon, push-cores from between the vessel's floors, approximately three to six feet to port of the ship's longitudinal centerline, indicated by the location of its keelson. A measuring tape was extended from stern-to-bow and samples were taken at 35, 45, 55, 66, and 75 feet forward of the preserved aft end of the hull remains. Recovery depth for the push-cores ranged from six to 23 inches. Samples were examined visually, photographed, and explored for evidence of burning. Upon completion of their examination, the small amounts of extracted sediments in each push-core was side-cast back onto the creek-bed adjacent to its collection location. Sawdust and wood chips, which were produced and deposited inside of the hull during the vessel's construction, were found preserved in the bottoms of all the push-core samples, except for the shallowest buried, after-most, 35-foot sampling location. The presence of this sawdust and wood chips indicated that the push-core methodology was effective in sampling undisturbed sediments from the time of the ship's construction that remained inside the lowermost part of the hull. If the Chelsea Creek vessel had burned, it seems that a charcoal layer, charcoal pieces, and/or burnt wood fragments would have accumulated and been preserved inside the hull and encountered in the push-core samples; however, none were found to be present. Based on the results from push-core sampling within the Chelsea Creek shipwreck, unlike HMS *Diana*, it does not appear that this vessel ever was exposed to fire or had burned.

- ***Chelsea Creek Shipwreck Site Wood Sample Extraction for AMS Radiocarbon Dating, Long Meadow***

On January 24, 2025, BUAR staff traveled to Long Meadow to meet with retired CZM staff member, Robert Boeri, for his assistance in extracting a wood sample from deep within a recovered piece of one of the Chelsea Creek shipwreck's floor timbers. This timber fragment had been recovered during the Fall 2023 wood sampling for the dendrochronological dating effort. Utilizing Mr. Boeri's wood-

working equipment, a plug of wood was successfully extracted from an approximately two-inch depth below a cut surface approximately 14 inches from the eroded stub end of the floor timber. This effort to collect the sample deep within the timber was done to avoid sampling wood that could be contaminated with hydrocarbons (petroleum oil) potentially absorbed into the wood from surrounding Chelsea Creek's sediments. The presence of even a small amount of oil can significantly affect the accuracy of the AMS radiocarbon dating of the wood. This concern about potential oil contamination is what led the Board's staff to pursue dendrochronological dating of the wood as a first option. The Board's staff will be contacting several labs to get pricing information and to discuss options for pre-treating samples prior to their dating attempt, to mitigate effects from potential oil contamination. Dave R reported he will then work with Mr. Kurkjian to select a radiocarbon dating lab and prepare and ship the sample. Mr. Kurkjian and his associates have, again, generously offered to cover the cost of obtaining the AMS radiocarbon date on the Chelsea Creek shipwreck timber.

- ***Castle Island State Park, Boston***

On February 4, 2025, the Board's staff will be joining DCR Archaeologist and BUAR Board member, Jonathan Patton, and DCR staff from the Castle Island State Park, Boston, to conduct a field-inspection of a feature-of-interest reportedly located out in the intertidal flats off the park property.

B. Meetings

- ***Native Land Conservancy Presentation: "How Tribal Nations are Leading the Way in Climate Change Adaptation, Planning and Resilience," Mashpee***

On January 31, 2025, the Board's staff will be attending the public presentation, "*How Tribal Nations are Leading the Way in Climate Change Adaptation, Planning and Resilience*," being given by Mashpee Wampanoag citizen and geographer (with a background in climate science), Dr. Casey Thornbrugh, at the offices of the Native Land Conservancy in Mashpee. The presentation will provide an overview of climate change impacts and adaptation by Tribal Nations and Indigenous communities with an emphasis on the East Coast and coastal communities, as well as a discussion on opportunities to learn from Indigenous climate change adaptation while maintaining respect for Indigenous knowledge and Tribal sovereignty.

- ***Indigenous Resources Collaborative Meeting, Plymouth***

On February 7, 2025, the Board's staff will be meeting in Plymouth with Linda Coombs, a Tribal Elder of the Wampanoag Tribe of Gay Head (Aquinnah), and author/educator, MAS Board member, and co-founder of the Indigenous Resources Collaborative (IRC), to continue an on-going discussion re: opportunities in 2025 for BUAR and the IRC to collaborate on Tribal and public engagement and education programming.

C. BUAR/CZM Project of Special Merit Update

BUAR and CZM's work on the NOAA Office for Coastal Management's Project of Special Merit (PSM) to assess the vulnerability of Massachusetts coastal cultural resources from coastal hazards and sea level rise made significant progress in the last month. Initial GIS mapping of the relative densities of coastal cultural resources and the resources most vulnerable to coastal hazards (e.g., erosion and inundation) is completed and the project is now entering its final phase. A second meeting of the Project Advisory Committee to review and get feedback on these initial maps is planned for early next month (February 2025). This meeting will be followed by meetings with Massachusetts's Tribal and coastal communities to get their feedback and to identify with them areas of cultural sensitivity that they want to be added in the project's final mapping. The PSM is scheduled to be completed in the Spring of 2025, and will address priorities documented in CZM's approved Section 309 Assessment and Five-Year Strategy for CZM Program Enhancement (FY 2021-2025). Results from the project will also assist CZM, BUAR, federal, state, local, and Tribal agencies and offices, and non-profit organizations make better-informed management

decisions regarding prioritization of adaptive management options for areas that include coastal cultural resources as part of an overall coastal management strategy.

3. BOARD MEMBER REPORTS

There were no Board member reports.

4. PUBLIC ENGAGEMENT ACTIVITIES

A. BUAR/Hassanamisco Nipmuc Tribe Underwater Archaeology and Project Mishoon STEM Educational Program, Girls, Inc., Worcester

On February 21, 2025, BUAR's staff and Hassanamisco Nipmuc Tribal Elder, Council-woman, educator, and long-time BUAR permittee and Director of Project Mishoon, Cheryl Stedtler, will be presenting a STEM educational program on underwater archaeology and Project Mishoon to girls (ages K-8) during Girls, Inc.-Worcester's 2025 Winter Break Camp.

Girls, Inc. is a national program that has been in existence for 100 years whose goal is to inspire all girls to be strong (healthy), smart (educated), and bold (independent). Girls, Inc. programs are designed to empower girls to succeed. As the oldest and only facility-based, girl-centered organization in Central Massachusetts, Girls Inc.-Worcester is unique among organizations serving youth, providing more than 1,000 girls in the Greater Worcester area with life-changing experiences and real solutions to the unique challenges that girls face. By offering research-based programming, girls learn to set and achieve goals, overcome obstacles, resist peer pressure, see college as attainable, and explore fields, such as STEM (science, technology, engineering, and math).

This will be BUAR's first educational program with Girls, Inc.-Worcester. Dave R reported that he could not think of a better program partner to inspire girls and share with them ideas and concepts about underwater archaeology than Ms. Stedtler and the Hassanamisco Nipmuc's Worcester-focused (Lake Quinsigamond) Project Mishoon.

B. Monson Free Library Public Presentation of "An Uncommon Wealth: Massachusetts Underwater Archaeological Resources," Monson

On March 8, 2025, at 11:00 am, BUAR staff will be presenting at the Monson Free Library, in Monson the public lecture, "*An Uncommon Wealth: Massachusetts Underwater Archaeological Resources.*" This talk will introduce attendees to BUAR, its mission, and the rich underwater archaeological resources that exist beneath Massachusetts waters, of which the BUAR and the public are the stewards.

5. OLD BUSINESS

A. Commonwealth Heritage Group, Inc. (SUP 22-003), Lowell Area Gas Modernization Project (Middlesex Canal), Lowell

Commonwealth Heritage Group, Inc.'s (CHG) Special Use Permit (22-003) for archaeological monitoring and documentation, as well as the recovery of artifacts, prior to and during construction activities associated with the Lowell Area Gas Modernization Project's area-of-potential-effect within two canal crossing areas (i.e., "Crossings 1 and 2" in Wetland W-2 and near Wetland W-5) of the Middlesex Canal in Lowell was set to naturally expire. CHG submitted its Final Report for the project and has fulfilled all the requirements of its BUAR Special Use Permit.

The Board's staff communicated with CHG's Principal Investigator on the Project, Martin Dudek, earlier this week. Mr. Dudek apologized that he was not able to attend this meeting and asked that Dave R summarize on his behalf the results of the project.

Dave R reported that implementation of the project's BUAR-permitted "Cultural Resources Treatment Plan" focused on the monitoring of the excavation of two new utility trenches (Crossings 1 and 2), situated

across the historical footprint of the Middlesex Canal and towpath portions of the National Register-listed Middlesex Canal District in Lowell.

The Middlesex Canal in the Crossing 1 area was found to consist of little more than a broad, water-filled, open ditch or channel that extended through wetlands. Adjacent to and still visible on the west side of this channel was a tow-path or berm composed of mixed fill of redeposited soil. Damages to the exposed portions of the canal's structure adjacent to the excavated Crossing 1 trench were mitigated by using timber mats during excavation.

Due to the oblique angle of the utility crossing's excavation, as well as past erosion and grading for a nearby natural gas pipeline installed in the 1950s, minimal differences in stratigraphy within the excavated Crossing 1 trench were noted during monitoring. No evidence for the use of stone or puddled clay in the construction of the canal prism, and no cultural materials, were encountered. A piece of wood with chain-saw kerf marks encountered in the Crossing 1 excavation trench was determined by CHG to be consistent with an episode of middle-twentieth century tree-clearing that was likely done as part of a nearby gas line's installation in the 1950s.

The Crossing 2 excavation trench was located within the Showcase Cinema de Lux parking lot, which was formerly an open wetland area. The canal in this area had been graded and filled by the 1980s. Trench excavation encountered sandy and gravelly fill layers above wetland muck. The trench excavation depth did not extend more than 30 to 35 cm into the wetland muck, and, as with the other crossing, no rock or structural remains associated with the canal were encountered. CHG determined that the depth of the trench (and project impacts) did not extend deep enough to conclusively identify the location of the canal prism. One wood fragment and one brick fragment were encountered and recovered for examination from the wetland muck, but CHG concluded neither was associated with the canal's structure. No other cultural materials were found to be present. Possible evidence of the remnant canal towpath, consisting of a gray, sandy strata that had been spread over the buried wetland before the addition of parking lot fill, was observed within the excavated Crossing 2 trench.

Based on the results of the monitoring that was done, CHG determined that the Middlesex Canal structure at the Crossing 1 and 2 locations consisted of an excavated ditch with a berm-like sandy tow path; however, the tow path and upper canal structure of the canal were found to have been compromised by 20th-century utility and parking lot construction, or to be located below project depth. Consequently, no further archaeological investigation was recommended by CHG. There was no further discussion. The Board considers this project and CHG's Special Use Permit (22-003) for the Lowell Area Gas Modernization Project (Middlesex Canal), Lowell, to be complete.

B. William Gallagher, Charles Zarba, Robert Foley, and Douglas Eaton (REC 22-008), Boston

William Gallagher, Charles Zarba, Robert Foley, and Douglas Eaton's Reconnaissance Permit (22-008) for their Boston site was up for renewal. At Mr. Gallagher's request, the Board had granted an extension of this permit's expiration date at its December 5, 2024 meeting. Mr. Gallagher, et al. submitted a complete renewal application, Annual Report, and a check for the renewal fee, in accordance with the Board's regulations. Messrs. Gallagher and Zarba were in attendance via remote access to represent this permit. Mr. Gallagher reported that boat problems had precluded the team from conducting diving operations on site during the 2024 permit year. Instead, project activities were limited to archival research. This research included an examination of newspapers in the Boston Public Library and historical records in the Massachusetts State Archives, as well as coordination with staff from museum archives in France. Messrs. Gallagher and Zarba both participated in the 2024 BUAR/MAS Photogrammetry Workshop. They are working on obtaining the necessary underwater photography equipment to begin applying what they learned in the workshop and documenting select elements of their permit area using photogrammetry during the 2025 field season. They are also exploring what would be needed to conduct a marine magnetometer survey of their permit area. Dave R offered BUAR's assistance in planning that work. Messrs. Zarba and Gallagher also asked about what would be required to add another diver to their project team. Dave R said that all that was needed was for them to submit a written notification via email to the Board of the planned addition of the named diver to the team. There was no further discussion.

Vincent Malkoski moved to grant William Gallagher, Charles Zarba, Robert Foley, and Douglas Eaton renewal of their Reconnaissance Permit (22-008) for their Boston site with all standard conditions in effect, for the period of one year, retroactive to the permit's original expiration date, of December 5, 2024, with its new expiration date set as December 5, 2025. John Warner seconded. Unanimous in favor by a roll-call vote. So voted.

C. The Public Archaeology Laboratory, Inc. (SUP 21-002), Town River Restoration-High Street Dam & Bridge Removal, Bridgewater

The Public Archaeology Laboratory, Inc.'s (PAL) Special Use Permit (21-002) for the construction phase archaeological monitoring and walkover (reconnaissance) survey of the Town River Restoration-High Street Dam and Bridge Removal Project area in Bridgewater was set to naturally expire. A second and final extension requested by PAL's Principal Investigator for the Project, Suzanne Cherau, was approved unanimously by the Board at its December 5, 2024 meeting, thereby extending the permit's expiration date. All the requirements of this BUAR Special Use Permit have been fulfilled except the submittal of the project's Final Report, which Ms. Cherau had anticipated submitting before today's meeting. The Board's staff communicated with Ms. Cherau on January 29, 2025, and she informed them that the Final Report would be submitted within the next few weeks. Ms. Cherau was not in attendance to represent this permit. There was no further discussion regarding this permit. Pending receipt of PAL's project report, the Board considers PAL, Inc.'s Special Use Permit (21-002) requirements fulfilled and the work conducted under this permit in support of the Town River Restoration – High Street Dam & Bridge Removal, Bridgewater, to be complete.

D. SEARCH, Inc. (SUP 23-002), Neptune Deepwater Port and Submarine Pipeline Decommissioning, Atlantic Ocean/Gloucester

SEARCH, Inc.'s Special Use Permit (23-002) for the marine archaeological assessment of the Massachusetts state waters of the Atlantic Ocean off Gloucester portion of the Neptune Deepwater Port & Submarine Pipeline Decommissioning project area was up for renewal. SEARCH, Inc.'s Ben Wells, Principal Investigator for the project, submitted a complete renewal application and Annual Report, in accordance with the Board's regulations. Mr. Wells was in attendance via remote access to represent this permit. Mr. Wells reported that SEARCH, Inc. sought to keep the permit open to facilitate and expedite the Board's review of any potential additional underwater archaeological investigations that could be required in the event of an unanticipated discovery during the project's decommissioning activities. There was no further discussion.

Graham McKay moved to renew SEARCH, Inc.'s Special Use Permit (23-002) for the marine archaeological assessment of the Massachusetts state waters of the Atlantic Ocean off Gloucester portion of the Neptune Deepwater Port & Submarine Pipeline Decommissioning project area, with all the standard and special conditions in effect, for the period of one year, with the permit's new expiration date set as January 30, 2026. Vincent Malkoski seconded. Unanimous in favor by a roll-call vote. So voted.

6. NEW BUSINESS

There was no New Business.

Dave R thanked the Board, its permittees, members of the public, and Ms. Bordonaro, who attended the meeting, and reminded everyone that the next regularly-scheduled public meeting of the Board will be at **12:30 pm** on **Thursday, March 27, 2025**. This meeting will also be held in a hybrid format and accessible both remotely and as an in-person meeting in CZM/BUAR's offices on the 9th floor at 100 Cambridge Street in Boston. Instructions for accessing the meeting remotely or in-person will be posted prior to the meeting on the Board's Public Meetings Information webpage (https://www.mass.gov/service-details/buar-public-meeting-information). Permittees and interested members of the public are encouraged to monitor the BUAR webpage's Public Meetings Information section for other updates, meeting agendas, and meeting minutes.

Vincent Malkoski moved to adjourn the meeting at 1:16 PM. Daniel Sampson seconded. Unanimous in favor by a roll-call vote. So voted.

Respectfully submitted,
David S. Robinson
Director