Community Advisory Council
September 24, 2026
Action Items/Notes

Final

Note: This was a hybrid meeting, held virtually through Zoom and in-person in SUSC, Bldg. 101, Room 124. A video recording of the Zoom meeting is available.

These notes are in the following order:

1. Attendance
2. Correspondence and handouts
3. Administrative items
4. Scientific presentation
5. Environmental update
6. Site Environmental Report, 2025
7. Community Comment
8. Agenda Setting

1. Attendance

Members/Alternates Present: See attendance sheet at the end of the notes

Others Present: M. Barger, T. Barger, L. Barger, B. Barth, D. Bluke, T. Bhat, X. Chen, C. Costello, A. Emrick, A. Engel, P. Genzer, S. Gonzalez, K. Greene, M. Justman, A. Klein, D. Manning, J. Michaels, J. Misewich, J. Mosho, J. Milligan, A. Ozelis, D. Paquette, R. Prwivo, V. Racaniello, A. Rapiejko, J. Remien, M. Schoonen, N. Shemet, L. Singh, M. Sweet, A. Urist, J. Wanlass, T. Welty, K. White

2. Correspondence and Handouts

Items numbered one and two were e-mailed to Members on September 17, 2026. Items number three, four and five were e-mailed to Members on September 23, 2026. Item number six and seven was e-mailed to members on September 24, 2026.

1. Draft notes from the May 14, 2026 meeting
2. Draft agenda for the September 24, 2026 meeting
3. Copy of presentation: “Microelectronics Pilot Program” presented by Jim Misewich, Associate Laboratory Director, Energy and Photon Sciences Directorate
4. Copy of presentation: “Site Environmental Report, 2025” presented by Jason Remien, Manager, Environmental Protection Division
5. Final Agenda for the September 24, 2026 meeting
6. Final (revised) Agenda for the September 24, 2026 meeting
7. Copy of presentation: “Update on BNL Environmental Compliance and Groundwater Protection” presented by Brian Barth, Manager, Groundwater Protection Group and Julia Michaels, Project Manager, Groundwater Protection Group

3. Administrative Items

The meeting was called to order at 6:32 p.m.

Everyone in the room and online introduced themselves. Ken White, Facilitator, reviewed the ground rules and agenda.

There were no comments on the May 2026 meeting minutes.

Amy Engel provided an administrative update that CAC membership will be discussed next month. She also noted that Brookhaven Town Councilwoman Karen Dunne-Kessing has a permanent scheduling conflict between Town Board and CAC meetings. Due to this, Luke Ormand has been designated to serve as the Town of Brookhaven's representative on the CAC.

Martin Schoonen, interim deputy director for science and technology, gave an update on behalf of BNL leadership. Since the last meeting, John Hill has been appointed as the Brookhaven Lab Director, after taking on the role of interim director last September. He also introduced Matt Barger, Brookhaven Site Manager who started in June.

Matt Barger was given the opportunity to address the CAC briefly to introduce himself. He shared that his Army and federal government experience led him to the Department of Energy and expressed enthusiasm for the Lab's mission, leadership, community involvement and its future impact on Long Island.

Schoonen went on to discuss other updates relating to the Laboratory Plan, which outlines Brookhaven's science, technology, and campus infrastructure vision through 2036. It received positive DOE feedback on its scientific vision and campus strategy and was being finalized for submission. Updates included positive recommendations following an EIC review to proceed with additional long-lead procurements and construction planning for site preparation, support buildings, utilities, and electrical infrastructure. Brookhaven is also leading seven Phase One projects and partnering on 29 additional projects under DOE's Genesis Mission AI effort, including a $14.2 million, three-year award to develop an AI foundation model to support more reliable and affordable electric-grid planning and operation. Additional highlights included the successful 13-mile free-space transmission of entangled photons between Stony Brook University and Brookhaven, demonstrating a promising technique for secure communications, and an October 1 realignment of science organizations to strengthen collaboration and support the Lab's future EIC, science, technology, and national security missions.

Quorum was established.

Ann Emrick, deputy director for operations, gave an update on operations at the Lab. The Laboratory is preparing to construct a DOE-funded new Main Gate entrance area, including two new security booths, canopy, lighting, signage, and card readers, with work expected to begin in late fall and continue through late summer 2027. The update also noted the success of the Explore Brookhaven Open House series, which welcomed more than 2,400 visitors and engaged nearly 300 employee and intern volunteers, as well as the recent demolition of the former 300,000-gallon Camp Upton water tower, built in 1941. The video of the demolition was played.

Jason Remien noted that the light at the top of the water tower was saved as part of the Lab's Cultural Resources Management program efforts and will hopefully be on display in the future.

**Action item* Member Schuhmann asks if we can send the water tower demolition video to CAC members when available.

Peter Genzer added that the new water tower is 500,000-gallon capacity.

The May 2026 notes/minutes were approved as written.

4. **Scientific Presentation –** *Microelectronics Pilot Program***,** Jim Misewich, Associate Laboratory Director, Energy and Photon Sciences Directorate

- **Microelectronics chips are ubiquitous**
  - Brookhaven is leading a new DOE microelectronics pilot program to support the nation's microelectronics mission, which is important to both the economy and national security.
  - The effort brings together Brookhaven and Lawrence Berkeley National Laboratory, combining complementary expertise, tools, and capabilities to support the microelectronics industry.
  - The work will be carried out in partnership with NY CREATES in Albany, a leading shared research and development facility where companies develop new microelectronic chips.
  - Microelectronics are essential to modern technology and are found in computers, smartphones, vehicles, appliances, and many other everyday products, providing performance, efficiency, and connectivity.

- **How are chips made?**
  - Microchips begin as silicon wafers and are built through a process called lithography, in which light is shone through a patterned mask onto a light-sensitive coating called photoresist.
  - The process creates the tiny features, wiring, and transistors required for a chip—often billions of reliable transistors—and is repeated many times to build the final device.

- **NYCREATES**
  - NY CREATES' Albany NanoTech Complex is a large, state-of-the-art microelectronics research and development facility in Albany. The facility provides a shared environment where multiple industry partners can develop, test, and advance new semiconductor technologies.
  - The complex includes extensive clean-room space equipped for advanced chip fabrication and development. These highly controlled spaces allow researchers and industry partners to carry out the many precise steps required to build microelectronic devices on silicon wafers.
  - Specialized yellow lighting is used in areas where photoresist materials are handled, preventing the light-sensitive coating from being unintentionally exposed before lithography. Staff wear full-body protective "bunny suits" to limit contamination in the Class 1 clean-room environment, where even particles smaller than one micron can affect chip performance.

- **Partner Contributions**
  - Advanced chip production requires major investment: NY CREATES is installing a high-numerical-aperture extreme ultraviolet lithography tool that costs about $500 million, along with roughly $500 million in facility upgrades to accommodate the large equipment and 300-millimeter wafer production line.
  - Because this production environment is extremely costly and must operate reliably, it is not well suited for experimenting with new materials, photoresists, exposure methods, masks, or measurement techniques needed to advance beyond current two-nanometer chip technology.
  - Brookhaven and Berkeley Lab are building a $2 million interference lithography research tool at NSLS-II that will use extreme ultraviolet light to create and test very small structures, helping researchers develop the next generation of chip-manufacturing materials and processes.
  - Brookhaven is building a research tool to test new photoresist materials for extreme ultraviolet lithography. Current polymer-based photoresists can allow

electrons to spread and blur extremely small patterns, so new materials are needed to maintain precise nanoscale features.
    - Researchers are also exploring future transistor materials beyond silicon, including two-dimensional materials made from atom-thick layers such as hexagonal boron nitride and graphene. Brookhaven's robotic system can create these layered materials more consistently than manual techniques.
    - Brookhaven will contribute in three key areas: lithography to create small features, materials research to develop future transistor materials, and metrology to measure and verify the structures produced. The Center for Functional Nanomaterials can develop materials, NSLS-II can measure them using X-rays, and industry partners at NY CREATES can scale successful technologies for production.

- **BNL Microelectronics History**
    - IBM has worked with Brookhaven for more than 30 years, using the Lab's X-ray facilities to study how microelectronics materials behave during heating and cooling—information that is important for chip manufacturing.
    - The new pilot program aims to close a gap between the microelectronics industry and national laboratories: companies may not know about Brookhaven's specialized capabilities, while the Lab needs a clearer understanding of industry's technical challenges.
    - One example is Brookhaven's work with IBM on nanosheet transistors. Using an exceptionally small X-ray beam, researchers can precisely measure strain in layered silicon and silicon-germanium materials, helping designers improve transistor performance.
    - Brookhaven has also improved its ability to map the copper wiring inside chips. AI is helping make these measurements faster and more detailed, allowing industry partners to receive useful results more quickly.

- **How can National Labs Impact Microelectronics?**
    - The DOE-funded microelectronics pilot is designed to close the gap between industry and national laboratories, supporting a national priority that is important to economic competitiveness, supply-chain resilience, and national security.
    - Industry partners need rapid, reliable access to advanced X-ray analysis, while the pilot addresses key barriers including awareness of national laboratory capabilities, access to user facilities, faster and larger-scale measurements through automation and AI, and protection of proprietary data.
    - Brookhaven and Berkeley Lab are working with NY CREATES and industry partners to identify and conduct high-priority experiments, particularly in next-generation lithography and metrology. Interest has been strong, with more potential projects identified than the team can currently undertake.

Q – Member Schuhmann asks about if the pilot program is connected to ASML, which produces the large lithography machines used by chip manufacturers.
A – Misewich explains that Brookhaven does not yet work directly with ASML but expects potential future collaboration, particularly on next-generation "beyond extreme ultraviolet" lithography using shorter, roughly three-nanometer wavelengths; national laboratories and industry partners are exploring new light sources because ASML's current laser-produced plasma source is limited to 13-nanometer light.

5. **Environmental Update –** *Update on BNL Environmental Compliance and Groundwater Protection*, Brian Barth, Manager, Groundwater Protection Group and Julia Michaels, Project Manager, Groundwater Protection Group
    - **VOC Remediation System Status – Dashboard**

- No status change since last meeting

- **Radiological Remediation Status – Dashboard**
  - No status change since last meeting

- **PFAS Remediation System Status – Dashboard**
  - No status change since last meeting

- **Groundwater Updates**
  - Since the last meeting in May, fieldwork continued throughout the spring and summer, including groundwater monitoring and characterization activities. The 2025 Groundwater Status Report, which summarizes the prior year's monitoring data, system performance, recommendations, and planned optimizations, was completed and will be discussed in detail at the next meeting.
  - Work is underway to further characterize the PFAS plumes associated with the Current Firehouse and Building 170. The characterization effort will inform the engineering design for potential additional extraction wells. Characterization of the BGRR and Building 650 Sr-90 plumes was also completed, with results expected to be shared once the full data set is compiled.
  - A milestone was reached with the off-site disposal of 97 tons of PFAS-impacted soil generated during construction work in a PFAS source area. The soil, which had been managed on-site for several years and was determined to be nonhazardous, was shipped to an approved waste-management facility in Michigan.

- **2026 CERLA Five-Year Review**
  - The Five-Year Review is required at Superfund sites where contamination remains at levels that could pose a risk to human health and/or the environment. It assesses whether existing cleanup remedies are performing as intended and remaining protective.
  - The Review follows EPA's standard process, including public notification and stakeholder input, document and data reviews, site inspections, and analysis of monitoring conducted over the past five years. Community survey responses are also included.
  - The protectiveness determinations for each operable unit were found to be either protective or short-term protective. Protective means the remedy is performing as intended, the remedy is protective of human health and the environment, and is anticipated to remain protective in the future. Short-term protective means the remedy is currently performing as intended but issues were identified that must be addressed in order to ensure future protectiveness.
  - No formal protectiveness determination was made for Operable Unit X – PFAS and 1,4-dioxane, because a Record of Decision and remedy are not yet in place; however, the Lab continues to review performance of its two PFAS treatment systems and associated monitoring data. A summary of Review issues, findings, and recommendations will be discussed with next month's 2025 Groundwater Status Report.

Q – Member Kern asked how the contaminated soil is disposed of?
A –The response explained that the soil was sent to a permitted, managed lined landfill with leachate controls after other options, including incineration, were considered; although high-temperature incineration can destroy PFAS compounds, it is significantly more expensive and challenging for the large volumes of contaminated soil that may require future remediation.

6. **Environmental Presentation –** *Site Environmental Report*, *2025,* Jason Remien, Manager, Environmental Protection Division

- **About the cover**
  - The 2025 Site Environmental Report cover will feature a northern long-eared bat to highlight Brookhaven's commitment to wildlife conservation, and the ecological benefits bats provide. While the federally endangered species is not currently believed to be present on site, Brookhaven monitors other bat species; the cover photograph was taken during a previous bat-monitoring program.

- **Chapter 2: Environmental Management System**
  - The Laboratory's Environmental Management System remains fully integrated and effective, using a plan-do-check-continuous-improvement approach to identify and manage environmental impacts across site operations. The program is supported by monitoring, inspections, regulatory oversight, and peer collaboration with other DOE laboratories.
  - Environmental performance highlights included an 83% waste-diversion rate, exceeding DOE's 50% goal, and recycling of 1,861 tons of material, including metals, electronics, and other site waste.
  - The Laboratory also received recognition through the Electronic Product Environmental Assessment Tool program for purchasing and properly recycling environmentally preferable computer equipment. Recycling efforts resulted in approximately $1.5 million in cost avoidance.

- **Chapter 3: Compliance Status Overview**
  - Chapter 3 of the Site Environmental Report covers the Laboratory's major environmental compliance programs. In 2025, the Lab reported 17 small spills, including nine reportable spills. Most were associated with construction activity and minor leaks from heavy equipment or contractor vehicles. All were promptly cleaned up, with little to no environmental impact or long-term effects reported; spill numbers were lower in 2026 to date.
  - The Laboratory remained in full compliance with county, state, and federal drinking-water requirements. Four of six permitted supply wells are active; two older wells that produce limited water and are located near the current Firehouse PFAS plume are not used. The Lab also maintains a cross-connection-control program with 292 backflow-prevention devices that are regularly inspected and tested to protect the potable water system.
  - The Lab manages 56 active petroleum bulk-storage tanks, ranging from approximately 100 to 600,000 gallons, as well as six active chemical bulk-storage tanks used at potable water supply wells for pH adjustment and disinfection. All tanks are subject to required monitoring, secondary containment, and alarm requirements, with no concerns identified in 2025.
  - All Laboratory projects undergo National Environmental Policy Act (NEPA) review to assess potential environmental impacts. In 2025, 171 projects were determined to be minor actions and categorically excluded from further review; four projects required additional information before DOE also granted categorical exclusions, including the water-tower demolition and other building demolitions.

- The Laboratory has maintained nearly three years of compliance with its SPDES permit, which governs discharges from the sewage treatment plant and recharge basins. Required parameters are regularly monitored, and no discharge violations have occurred.
- Regulatory inspections in 2025 found no violations or significant concerns. New York State inspections covered Title V air emissions, hazardous-waste management, and petroleum and chemical bulk-storage tanks; Suffolk County also conducted drinking-water and sewage-treatment-plant inspections, identifying only minor maintenance items that were promptly addressed.
- The Lab continued working with New York State on renewal of its Title V air permit, with no major changes anticipated and public comment expected once the draft is issued. RCRA and treatment-system permits were also modified or renewed, including removal of certain 90-day hazardous-waste storage areas.
- Additional assessments by DOE, Brookhaven Science Associates, other national laboratories, and external reviewers identified only minor issues and opportunities for improvement. A Level 2 finding involving administrative responsibilities for archiving environmental-monitoring data was corrected, while broader EMS assessments found noteworthy practices and no major or minor nonconformances.

- **Chapter 4: Air Quality (Non-Radiological)**
  - The chapter reviewed the Laboratory's air-emissions monitoring and compliance. In 2025 and through the first half of 2026, emissions of regulated pollutants—including sulfur dioxide, nitrogen oxides, particulates, and volatile organic compounds—remained well below Title V permit limits. Natural gas, which accounts for 91% of the Lab's heating fuel, contributes to lower emissions.
  - The Lab continuously monitors emissions from its two most frequently used boilers. Occasional brief exceedances can occur during boiler shutdown and startup, but they are identified promptly, corrected, and reported to the state; they are not considered permit violations.
  - The sewage treatment plant processed approximately 200,000 gallons per day and achieved 100% compliance with SPDES permit requirements in 2025. The Lab also continued monitoring the Peconic River, where limited flow has occurred in recent years, and found no Laboratory-related impacts; occasional metals detected were naturally occurring.
  - Permitted recharge basins that receive cooling water, stormwater, and other relatively clean wastewater were also monitored for volatile organic compounds, metals, anions, and other water-quality indicators. Results remained within standards, supporting continued 100% SPDES compliance.

- **Chapter 5: Environmental Radiological Monitoring Program & Dose Assessment**
  - Four perimeter air-monitoring stations operate continuously and are sampled for gross alpha, beta, and tritium; 2025 results showed no Laboratory-related impacts, with concentrations either not detected or below method detection limits.
  - Three facilities—Brookhaven Linac Isotope Producer (BLIP), the Radionuclide Research and Production Laboratory (RRPL), and the High Flux Beam Reactor (HFBR)—are continuously monitored for radiological emissions. Total emissions in 2025 were 7,512 curies, down from

approximately 22,000 curies in 2024, largely because BLIP operated less while upgrades were underway. About 99% of emissions were from BLIP's medical-isotope production and involved short-lived radionuclides.
    - Direct radiation was measured through 50 on-site and 16 off-site thermoluminescent dosimeters (TLD). Average on-site and off-site readings were statistically the same—64 and 62 millirem, respectively—indicating no external radiation-dose contribution from Laboratory operations.
    - Using EPA's conservative CAP88 model, the estimated annual dose to a maximally exposed off-site individual from Laboratory operations, including air emissions and potential deer consumption, was 2 millirem—well below the 10-millirem regulatory limit and small compared with the average annual U.S. radiation exposure of about 620 millirem.

- **Chapter 6: Natural Resources Management/ Cultural Resources Management**
    - In 2025, the Lab mechanically treated 32 acres and conducted prescribed burns on 23 acres to reduce wildfire risk and protect nearby communities; even more acreage was treated and burned in 2026.
    - Deer management continued, with 43 deer removed in 2025 and 211 in 2026. Cs-137 monitoring of deer showed continued reductions in average concentrations, from approximately 2.6 pCi/g before site cleanup efforts to 0.41 pCi/g today.
    - The natural resources program documented 80 bird species on site and continued research on forest management, fire effects, birds, and ticks. Six interns supported this work, and a SUNY College of Environmental Science and Forestry Ph.D. student studied how prescribed burns affect tick populations.
    - Cultural resource efforts included historic-site kiosks, a possible interpretive display for the former water tower, and an archaeological survey supporting the EIC project. The survey found no culturally significant resources in planned project areas, and no impacts to historic or archaeological resources were identified in 2025 or 2026.
    - The Lab also supported environmental education and outreach through the Day in the Life of the River program, which engaged more than 1,800 students and teachers in collecting environmental data from 11 Long Island rivers, as well as student projects focused on local history, archaeology, and Pine Barrens ecology.
    - Through a memorandum of understanding with SUNY College of Environmental Science and Forestry, Ph.D. student Sam is studying how Brookhaven's forest-management practices and prescribed burns affect tick populations, with students conducting surveys before and after burns to measure changes in tick numbers.

- **Chapter 7 – Groundwater Protection**
    - Will be covered during the next meeting in October.

Q- Member Karp asks what the results from Sam's research on the effects of prescribed burns on tick populations are.
A- Remien answered that the response noted that the research is ongoing across multiple sites and no conclusions are available yet; but the CAC will receive an update, possibly from Kathy Schwager when results are available.

Q- Member Jordan-Sweet asks about the higher number of deer removed in 2026 and who conducted the culling.

A- Remien explains that weather limited two of the planned deer-management efforts in 2025, resulting in a larger deer population the following year; improved weather also allowed for more successful 2026 efforts. The program is conducted by USDA Wildlife Services.

7. Community Comment

- There was no comment from the community.

8. Agenda Setting

- Fall Agenda:
  - October 8: Science Presentation, Quantum Link – Justine Haupt
- Future topics:
  - AI
  - Turtle Dogs presentation by Jen Higbie

Meeting adjourned at 8:27 pm
Next meeting: October 8, 2026

X = Present 2026 Affiliation		First Name	Last Name	Jan	Feb No mtg	Mar	Apr	May	June No mtg	July No mtg	Aug No mtg	Sep	Oct	Nov	Dec No mtg
ABCO – Civic	Member	Ray	Keenan	X		X	X	X				X			
	Alternate	Michael	Madigan												
Brookhaven Coalition of Chambers of Commerce – Business & Labor	Member	Ron	Trotta					X							
	Alternate	Carmine	Inserra												
Brookhaven Retired Employees Association- BNL Affiliation	Member	Mark	Israel	X		X	X	X							
	Alternate	Eena-Mai	Franz												
	Alternate	Arnold	Moodenbaugh									X			
Brookhaven Village Association – Civic	Member	Reinhardt	Schuhmann	X		X	X	X				X			
	Alternate	Chris	Ciervo												
Citizens Campaign for the Environment – Advocacy & Environment	Member	Adrienne	Esposito	X		X	X								
	Alternate	Christina	Lizzo	X		X	X								
Cornell Cooperative Extension – Health based	Member	Chris	Pickerell					X							
	Alternate	Lorne	Brousseau												
Country Pointe Meadows – Civic	Member	Jeff	Williams	X		X		X							
	Alternate														
East Yaphank Civic Association - Civic	Member	Robert	Feinman												
	Alternate	Laura	Reid												
Emeritus	Member	David	Sprintzen				X	X				X			
FOREST - Advocacy & Environment	Member	Tim	Green	X		X		X				X			
	Alternate														
Foundation for Economic Education – Education, Science & Technology	Member	Craig	Pratka	X		X	X	X				X			
	Alternate	Christian	Price	X		X									
Individual	Member	James	Freeman	X		X		X							
Individual	Member	Jane	Corrarino												
Individual	Member	Karen	Blumer	X											
	Alternate	Michael	Madigan	X			X	X							
L.I. Pine Barrens Society – Advocacy & Environment	Member	Nina	Leonhardt												
	Alternate	Travis	Cutter	X		X	X	X				X			

Longwood Central School Dist. – Education, Science & Technology	Member	James	Crenshaw												
	Alternate														
Middle Island Civic Association – Civic	Member	Martin	Filler	X		X		X				X			
	Alternate	Margaret	Malloy												
	Alternate 2	Larry	Mazza				X								
National Grid – Business & Labor	Member	Brian	Sapp	X		X	X	X				X			
	Alternate	Michelle	Zarifis					X				X			
New York League of Conservation Voters – Advocacy & Environment	Member	Casey	Petrashek												
	Alternate	Joseph	Stallone	X		X						X			
NSLS-II User Committee – BNL Affiliation	Member	Jean	Jordan-Sweet	X		X		X				X			
	Alternate	Matthew	Whitaker				X	X							
Ridge Civic Association – Civic	Member	Scott	Wood												
	Alternate	Barbara	Royce					X							
Stony Brook Hospital – Health based	Member	Erika	Karp	X		X	X					X			
	Alternate	Kristin	Busardo-Cuomo					X							
Suffolk County Legislature 1st Dist. – Government	Member														
	Alternate														
Teachers Federal Credit Union – Business & Labor	Member	Jashmin	Futch			X	X	X							
	Alternate	Kathleen	Misiano												
Town of Brookhaven – Government	Member	Luke	Ormand									X			
	Alternate	Peter	Fountaine												
	Past Member														
	Past Alternate 1	Patricia	Kaloski	X											
	Past Alternate 2	Julia	Norris	X											
Town of Riverhead - Government	Member	Robert	Kern			X	X	X				X			
	Alternate	Frank	Mancini												
Wading River Civic Association - Civic	Member	Henry	Perez	X		X	X	X							
	Alternate	Linda	Rundlett												