Call for Proposals

November 10, 2026

The Sea Level Investigation and Management (SLIM) program at Harvard's Salata Institute for Climate and Sustainability invites proposals for research on storing water on and within the land to slow sea level rise. Our objective is a credible, costed plan for water storage at the scale of Greenland's annual melt, supported by measurements, assessment of candidate locations, and analysis of benefits and implementation requirements.

We expect to commit approximately $2 million in first-year awards across five to seven projects, subject to funds available. Proposal evaluation will begin on December 1, 2026, with no further proposals accepted after January 11, 2027, at 5:00 pm Eastern Time.

Sea level is projected to continue rising through mid-century under both low and high emissions scenarios. We ask whether additional water can be retained on land at a rate comparable to Greenland's annual ice loss—hundreds of cubic kilometers per year—and at what cost. For comparison, approximately 360 km^3 of water corresponds to 1 mm of global mean sea level.

Water is already conveyed and injected at scale at Ghawar in Saudi Arabia, through U.S. Class II wells, and through managed aquifer recharge in California. These operations offer opportunities to measure the costs and limits of the relevant technologies; they do not by themselves establish the feasibility of sea level management, which requires sequestration rates that are multiple orders of magnitude beyond that of any single existing facility. Freshwater aquifer management also offers potential local benefits through improved water supplies and reduced depletion and subsidence.

The first year will bring together four investigations: cost, siting, value, and the capabilities needed for implementation. At the first-year review, results will inform a choice among a dedicated field test, continued measurement, a change of approach, or stopping an unpromising route. Findings that establish a limiting constraint are as useful as findings that identify a feasible next step.

Research areas

We seek proposals in six areas. Each should answer an open question bearing on the feasibility of sea level management. Physical and engineering studies should estimate capacity, achievable storage rate, net additional water retained outside the ocean over time, and cost. State the baseline, storage duration, uncertainty, and limits to extrapolation. For replenished systems, assess the additional stock maintained outside the ocean, not only the residence time of individual water parcels. Economic and governance studies should deliver the valuations, institutional assessments, or other findings needed for the same feasibility decision, with quantification where defensible.

1. Injection and storage technology

What does it cost to put a cubic meter of water underground, and how does that cost change with rate and scale? We seek an instrumented cost experiment at an operating injection or recharge facility, supported by laboratory core-floods and field-scale simulation. The objective is not to demonstrate that water can flow, but to measure the quantities that govern scaling.

These include injectivity and its decay, pressure propagation and well interference, containment, compatibility of fresh or saline water with the formation, and energy and costs from water sourcing and pretreatment through conveyance, injection, and monitoring. Distinguish capital and operating costs and explain which costs of existing infrastructure would recur in a new installation. Show how the measurements constrain a larger well field and identify what remains untested. Name the facility, specify the measurements and operational tests it will permit, and provide a letter confirming access to the facility and necessary data.

2. Geologic storage characterization

Where can fresh and saline water be stored at useful rates and volumes? We seek a version-one global screening atlas and targeted regional assessments, ranked by usable additional storage, confinement, achievable rates, water sourcing, distance and lift, permitting requirements, partner availability, and projected cost. Proposals may address the atlas, a regional assessment, or a method needed for both; state the intended coverage and data limitations.

The Nubian Sandstone Aquifer System is a first priority for detailed assessment. Saudi Arabia is also of interest, with no site assumed. The U.S. Southwest offers opportunities for measurements and comparisons that can inform the priority settings. Distinguish theoretical pore space from storage usable within pressure and environmental limits. Assess freshwater and saline routes separately, including displacement of existing water, hydraulic connectivity, induced seismicity, and salinization risks. Identify local institutions and data needed for the next stage.

3. Sustainable management of freshwater aquifers

How much can freshwater routes contribute, and at what retention rates? We seek estimates of the additional water that reduced abstraction, managed recharge, and managed flooding could retain on land. Distinguish avoided depletion from added recharge, account for the water's alternative fate, and assess retention under continued pumping and replenishment.

Estimate costs, including foregone uses such as irrigation, and local benefits such as water availability and avoided subsidence. Separate local relative sea level benefits from changes in global mean sea level. We are particularly interested in work with existing groundwater sustainability programs, including those under California's Sustainable Groundwater Management Act, that identifies the sea level contribution of planned measures and the additional contribution possible through further management.

4. Value of a stored cubic meter

What is a cubic meter worth, stored where, and for how long? The SLIM program uses an order-of-magnitude working value of 10 cents per additional cubic meter retained outside the ocean. This is a provisional comparison value, not a universal pass/fail threshold. Its applicability depends on the timing and duration of storage, regional sea level effects, coastal exposure, adaptation, and the valuation horizon.

Building on foregoing sea level cost studies[1,2], we seek empirical evidence on adaptation in practice: responses where subsidence has raised relative sea level, continued development on exposed coasts, the scope and cost of adaptation plans, and the consequences of relocation and migration. Translate the findings into storage-value estimates and sensitivities that can be compared with engineering costs. State the assumptions that distinguish conservative estimates from working scenarios. Identify local benefits and costs separately and avoid double counting.

[1] Bolliger, I., Cederberg, G., Dangendorf, S., Depsky, N., Huprikar, A., Kopp, R.E., Mitrovica, J.X., Yu, M., Hsiang, S., Huybers, P. and Kennedy-Yoon, E.R., 2026. Quantifying asymmetries in the societal impact of mass loss from the Antarctic and Greenland Ice Sheets. Earth's Future, 14(5), e2024EF005914.

[2] Diaz, D.B., 2016. Estimating global damages from sea level rise with the Coastal Impact and Adaptation Model (CIAM). Climatic Change, 137(1), 143–156.

5. Emergency capacity

How fast could storage be mobilized if West Antarctic ice loss accelerates? We seek assessments of surface capacity, including topographic depressions and reservoirs, with usable volumes, filling rates, lead times, costs, and regional sea level effects, including at the ice margin once gravitational effects are included.

The Qattara Depression is a first-priority reference case. We seek recovery and a desk-based update of the 1975–1981 German–Egyptian engineering studies, including conveyance and power requirements, modern excavation costs, seismicity screening, salinity, evaporation, groundwater interactions, and local consequences. Distinguish the capacity available after infrastructure is built from the capacity that could actually be mobilized in an emergency, and identify what would require advance preparation. Engineering interventions at ice sheets are outside this call.

6. Politics, law, and ethics

Who must agree, and on what terms, before storage scales? We seek analyses of consent, liability, compensation, existing water rights, and governance for host communities and transboundary aquifers. For the Nubian system, this includes its shared governance across Chad, Egypt, Libya, and Sudan.

Identify the institutions and agreements needed for a next-stage investigation or implementation, and the conditions under which hosts, operators, utilities, and prospective funders could participate. Assess how a verified cubic-meter-year of additional storage could be defined and, where feasible, credited. Deliverables may include an approval pathway, institutional options, and unresolved legal or ethical conditions. For these proposals, such findings may substitute for engineering cost estimates.

Exploratory grants also support ideas outside these areas that could change the capacity, cost, or practicality of terrestrial water storage. Examples include low-cost desalination, lift and conveyance, and restoring capacity in sediment-filled reservoirs. Explain the contribution to SLIM's central question.

Awards

Award	First-year amount	Term	Proposal
Exploratory grant	Up to $50,000	One year	Up to 3 pages
Project grant	$100,000–$400,000	Two-year plan; only year 1 committed initially	Up to 8 pages
Instrumented cost experiment (area 1)	Up to $1 million	Two-year plan; only year 1 committed initially	Up to 8 pages

We anticipate one instrumented cost experiment, approximately four project grants, and a small number of exploratory grants. The portfolio will be assembled to address the shared feasibility decision. Final allocations may differ after review of proposals and funds available.

Project and cost-experiment proposals present a two-year plan with a separate budget for each year. The first-year award is committed in the award letter. Additional funding for continuation, revised scopes, or new awards is expected after the first-year review, but is not guaranteed. The review will consider both project progress and what the combined evidence indicates should happen next.

Eligibility

Faculty and principal investigators at Harvard and other universities and nonprofit research institutions may apply. Investigators outside Harvard are funded through subawards. Postdoctoral fellows and graduate students may apply for exploratory grants with a faculty advisor's co-signature. Companies, utilities, and government agencies may participate as partners or subcontractors on an eligible investigator's proposal.

Site-specific fieldwork or research requiring nonpublic local data should include an appropriate in-country institutional collaborator. Desk-based studies using public data should explain how relevant local expertise will inform the work. A research partnership does not substitute for governmental authorization or community consent where required. No prior work on sea level is necessary.

Workshops and reporting

Principal investigators attend two workshops at Harvard: one in spring 2027 and a first-year program review in January 2028. The first brings investigators together with the steering committee and operators, utilities, and agencies that move water at scale. It will establish shared comparison assumptions and identify information needed for implementation. Budgets should include the principal investigator's travel and any justified team participation; exploratory-grant participation will be specified at award.

Awardees submit a one-page quarterly progress report and present at approximately six months after their award begins. At the January 2028 review, each project will report findings against milestones agreed for its start date, remaining uncertainties, and implications for the next investment. A final report is due 60 days after the award ends.

SLIM will integrate the projects into a comparative assessment and a decision memorandum identifying the next step, its costs, conditions, and remaining uncertainties. Investigators contribute results and assumptions needed for that synthesis. Publications are expected, but the defined output of an award is evidence that informs the program's decision.

Timeline

Date	Milestone
November 10, 2026	Call issued
December 1, 2026	Proposal reviews begin
January 11, 2027, 5:00 pm Eastern	Proposals due
February 1, 2027	First selection decisions announced, subject to award conditions
February 15–March 15, 2027	Awards begin on dates specified in award letters
Spring 2027	First workshop at Harvard
Quarterly; approximately six months after start	Progress reports; presentation
January 2028	First-year program review and second workshop
Following review; aligned with award end dates	Continuation, revised-scope, and new-award decisions

The January 2028 review is a program-wide review, not necessarily each project's twelfth month. For awards ending before the program-wide continuation decision, an earlier review will be arranged. Continued expenditure requires written funding authorization; no unfunded extension is implied.

Application

Project and cost-experiment proposals are up to eight pages; exploratory proposals are up to three pages. Figures and tables count toward these limits. References and the supporting documents below do not. Address the following:

1. Question and objectives: State the open question, its contribution to storage at the scale of Greenland's melt, and the decision the work will inform.

2. Background: Summarize what is known, with the numbers and uncertainties that frame the problem.

3. Approach: Describe methods, data, sites, partners, and access. Explain how findings transfer beyond the specific site or case, where relevant.

4. Outputs: Specify findings at six and twelve months and, for two-year plans, at twenty-four months. Include results available for the January 2028 review. Use the common quantities above where applicable; distinguish measurements, modeled estimates, and assumptions. Report cost estimates in cents per cubic meter, stating the cost boundary, price year, operating scale, duration, and any financing or discount assumptions.

5. Barriers and next step: Identify technical, economic, political, and environmental constraints. Explain what findings would support proceeding, changing approach, or stopping, and what would remain unresolved.

6. Timeline: Give quarterly milestones. Second-year work should respond to the possible first-year findings rather than assume continuation.

Provide a two-page CV or biosketch for each principal investigator; a budget and brief justification for each proposed year; and a one-page current-and-pending-support summary for each principal investigator. Budgets should identify personnel, equipment, travel, subawards and subcontracts, and other costs.

Where the work depends on a facility, nonpublic data, or a collaborating institution, provide a letter specifying participation and access. Identify confidentiality restrictions and the results that can be reported. Institutional sign-off is required before award, not at submission.

Evaluation

The SLIM Steering Committee reviews complete proposals and may consult external reviewers. It advises on selection and funding; final award decisions rest with the Faculty Director and Harvard through the Salata Institute. Reviewers disclose relevant conflicts. Where a proposal involves the Faculty Director or another reviewer, its review and approval will be handled independently of that person.

Proposals are evaluated on the importance of the uncertainty they resolve; the rigor and feasibility of obtaining useful findings in the first year; access to necessary facilities, data, and partners; the team's ability to deliver; cost relative to what will be learned; and contribution to a coherent program-wide assessment. A rigorous negative result is a valuable outcome. Exploratory proposals are judged on the importance of the question and a credible test, not an expectation of mature cost estimates.

SLIM may request revisions, offer partial funding, or invite teams with complementary proposals to combine. No applicant is expected to establish the feasibility of the entire program independently.

Award policies

Start dates and continuation: Award letters specify the funded period, amount, milestones, and conditions. Only the first year is committed initially. Continuation follows the review and written authorization described above.

Allowable costs: Awards cover salary and fringe for postdoctoral fellows, students, and research staff; up to one month of faculty summer salary per year; laboratory, field, instrumentation, computing, and data costs; subcontracts to operating partners; and travel. Equipment above $25,000 requires prior approval.

Indirect costs: Harvard budgets should not include indirect costs. External subawards may include indirect costs of up to 15% of direct costs, within the requested award total.

Field activity: This call supports measurements and operational tests within existing permits and the operator's written agreement, including approved instrumentation. It does not authorize new storage operations, injection wells, water diversions, or construction. A dedicated field test would require a separate funding decision and all applicable approvals.

Data and results: Awardees provide findings for the first-year synthesis and deposit data, code, and cost models in a public repository within 12 months after the award ends. Approved confidentiality agreements may protect operator data, but must permit public reporting of unit costs, injection performance where relevant, and sufficient methods and assumptions to evaluate the conclusions.

Communications: Notify SLIM before press releases or public announcements about funded work. Publications must acknowledge support from the "Sea Level Investigation and Management Program at the Salata Institute for Climate and Sustainability, Harvard University."

Compliance: Awardees obtain required institutional approvals, including for fieldwork abroad. No award constitutes approval for an intervention beyond its stated scope.

Submission

Send the proposal and supporting documents as PDFs to **John Prandato, Salata Institute, jprandato@fas.harvard.edu.** We are glad to discuss fit before a proposal is written. The SLIM white paper and background materials are available on request.

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