IMWO
International Marine Work Organization

COASTAL PROTECTION / DELIVERY REVIEW

Coastal Protection: Funding the Work That Completes the Defence

Material allocation, changed scope and the cost of releasing a functioning coastal asset.

Ocean City / Ebeye / Gorée
Genoa / Vadhvan / West Point

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Contents

The remaining work changes the funding decision 3

Ocean City: the next sand purchase needs its own quantity account 4

Ebeye: allocate scarce rock to a functioning protection line 4

Gorée: a budget transfer carries a second completion bill 5

Genoa: release the receiving location before committing the next caisson 7

Vadhvan: the breakwater award changes the package comparison 8

West Point: make the permitted footprint executable 9

A completion account that can support a funding decision 9

Evidence, calculations and case boundaries 11

Sources 12

The remaining work changes the funding decision

In January 2026, the last 379 metres of Ebeye's planned new seawall still separated the completed work from protection of the southern energy assets. At Gorée, urgent slope stabilisation absorbed money reserved for landscaping. Each project faced a funding decision tied to a particular unfinished reach: where to send the next shipment, what work the existing budget could complete, and what further commitment would close the protection system. [4,12]

This October review follows six projects through those decisions. Ocean City has a completed nourishment campaign and a continuing repair obligation. Ebeye provides a completed island defence with a documented history of material scarcity. Gorée exposes the budget consequences of revised protection needs. Genoa connects foundation release to serial caisson production. Vadhvan separates an awarded breakwater from a proposed financed land-creation package. West Point fixes the permitted footprint before procurement can define executable work.

The commercial comparison is the cost and time needed to make the next useful part of the system function. A metre of wall beside an exposed power station has a different consequence from a metre along an already protected reach. An available caisson occupies production and storage resources until its seabed location is released. A storm repair needs a survey and funding decision while the option of retaining plant is still available.

IMWO recommends a reach-level completion account for these decisions. It combines the asset served, remaining physical work, material class, release condition, forecast certificate and funding authority. Owners can use it to allocate scarce money and marine resources; contractors can use the same record to price the actual remaining operation. The six cases below show where that account changes the decision.

Case	Dated position	Decision affected
Ocean City	2026 nourishment completed 7 September	Measure the next repair against an agreed survey baseline.
Ebeye	September completion follows an earlier southern-reach material gap	Allocate rock by protection delivered to exposed assets.
Gorée	June paper sets out an additional-financing and amendment plan	Fund revised protection and the displaced completion work together.
Genoa	1670 m reported 13 October; further Phase A budget authority runs into 2028	Match released seabed locations, caissons and payment forecasts.
Vadhvan	Breakwater LoA disclosed 9 June; HAM terms remain a separate record	Price package interfaces and finance against their own terms.
West Point	March permit landing defines an approved coordinate footprint	Bind the tender drawings and construction method to that footprint.

Ocean City: the next sand purchase needs its own quantity account

Ocean City records completion of the Peck Beach campaign on 7 September 2026. USACE's updated project account supplies the owner-side construction position. These close the summer operation as a dated campaign; they also establish the starting documents for the next assessment of beach condition. [1, 2]

The repair estimate should connect three surveyed surfaces: the accepted construction template, the latest suitable pre-storm condition and the post-storm surface. Keep reach limits, horizontal reference, vertical datum and survey dates aligned. The first comparison closes the construction quantity; the second measures subsequent change; the third supports a defined restoration option. Mixing surfaces or boundaries can assign ordinary nourishment demand to the wrong funding account.

For federal rehabilitation, 33 CFR 203.49 links assistance to a completed federal project or qualifying portion, extraordinary storm damage and specified damage tests. Transfer to the non-federal sponsor for operation and maintenance forms part of the completion boundary. For sacrificial features, the rule limits assistance to immediate-threat reduction or pre-storm restoration, whichever is less; the cooperation agreement governs allocation of rehabilitation and additional periodic-nourishment costs. [3]

That division matters when the owner wants to retain a dredge. The restoration quantity, additional nourishment quantity and plant availability date should reach the commercial team together. A modification can preserve an available production window, but ties up plant and may add standby or changed borrow constraints. A later competition brings a fresh mobilisation and a longer exposure period. The option comparison should price both schedules against the same measured repair scope.

The handover file should therefore retain the signed transfer, accepted survey, outstanding work and sponsor maintenance responsibility by reach. These records let the owner determine what a later repair restores, which authority can fund it and whether the available plant option justifies an early commercial decision.

Ebeye: allocate scarce rock to a functioning protection line

Hall's 30 September account describes completion of a 1.81 km seawall with waterfront access and connections to the island's drainage scheme. Earlier World Bank records explain why reaching that finished line required more than procuring an undifferentiated tonnage of rock. [4, 5, 6]

In January 2026 the World Bank recorded 1,421 metres built against 1,800 metres of new construction and an unexpected rock shortfall reported in November 2025. The remaining 379 metres represented 21.1% of the new-build length. Yet the energy-assets indicator remained zero because the works had not reached the southern power station and solar array. The same report used a proportional estimate

for annual damage reduction. The location-specific indicator explains why a percentage of wall length could give a poor guide to the next material allocation. [4]

The April 2024 financing paper gives the design reason for continuity: a shortened wall could expose neighbouring occupied land to flanking erosion. Two proposals had been received, with one passing technical evaluation, against a construction budget of about US$37 million. The financing response supported the full protection line. A shorter procurement would have changed the defended boundary and the treatment required at its ends. [5]

For comparable island schemes, the next barge-load should be allocated through an asset-linked schedule. Show chainage, the exposed asset, toe and filter completion, armour grading, end connections and drainage inspection. Where phasing is necessary, the engineer should define a temporary end treatment and its design exposure, while the estimator prices the later return mobilisation. This makes the cost of the funding decision visible before the wall is shortened.

Hall reports mobilising 84,000 tonnes of armour rock and fill. A material account should separate those functions at dispatch, landing, placement and remaining stock. An accepted armour grading and section become the basis for later maintenance orders; combined delivered tonnage cannot serve that purpose on its own. The completed route also needs assigned responsibility for drainage outlets and inspections after overtopping. [6]

Gorée: a budget transfer carries a second completion bill

The World Bank's 25 June 2026 paper identifies repeated stoppages in rough seas and slow rock deliveries caused by competing quarry demand around Dakar. It records a seven-month supply delay at the start of work. New structural risks then changed the remaining task: the Mariama Bâ school wall had collapsed and the mosque embankment required stabilisation. Material-price inflation and site-specific design revisions added to the financing gap. [12, paragraphs 7-10]

The project prioritised the mosque slope by reallocating US$1,266,744 from landscaping. Its updated protection-work completion stood at 85%; including landscaping reduced the reported overall figure to 75%. These percentages describe different work contents. The budget transfer advanced an urgent protection function while carrying the displaced promenade and landscaping work into the completion funding requirement. [12, pages 2-5]

The proposed additional financing totals US$4 million equivalent across Senegal's physical and social works, institutions and coordination. The physical and social component accounts for US$3,035,147. Within it, the paper allocates US$1,615,799 to the further eastern protection works, including approximately 105 metres of dike at the school, and US$1,266,744 to landscaping. These are proposed activity allocations with a wider scope than a single coastal works contract. [12, tables 1-2]

Provision	US$ allocation	Work or funding consequence
Eastern protection extension	1,615,799	Further finance for the school-side protection works.
Promenade and landscaping	1,266,744	Restores funding for work displaced by slope protection.
Physical and social component total	3,035,147	Also includes school-wall rehabilitation and income-generating activities.

Annex 3 sets out a contractual route through continuation and adjustment of existing arrangements. Its plan schedules signature of additional works in July 2026, amendment approval in August, work-plan and execution-file approval in September, and protection works in March 2027. Landscaping acceptance and the beneficiary survey are scheduled for May 2027. The paper proposes extending Senegal's closing date to 30 June 2027; the regional operation's separate closing date appears elsewhere in the document. The June plan establishes the sequence to verify, rather than an October record of completed amendments or payments. [12, pages 1-5 and 54-57]

The material contingency is equally specific: two stockpile sites at Dakar's Pier 8 are intended to sustain at least one month of work through another supply interruption. The paper also considers concurrent work fronts to mitigate weather delay. For the owner, a stockpile commitment needs the right grading, usable inventory and transfer route. For the contractor, a second front consumes additional crew, plant and supervision and helps only when both fronts have released drawings, materials and safe access. [12, paragraphs 21-22]

The financing board should reconcile the revised physical schedule with the signed variation, supervision period and monthly certificate forecast. Table 2's activity allocations and Annex 3's disbursement schedule use different detailed totals; the latter expressly includes US$23,473 carried forward for audit. The payment forecast should be reconciled to the operative agreements and current budget before it is used to commit funds. The public June paper establishes the need and proposed response; confirmation of later approval, effectiveness and actual disbursement remains the next financing evidence.



Budget redirected to urgent protection leaves displaced landscaping to be funded in the completion plan. Values follow the June paper's proposed activity allocations. Graphic: IMWO.

Genoa: release the receiving location before committing the next caisson

The consortium reports 1,670 metres of breakwater extension on 13 October 2026 and a second caisson placement within eight days. Fabrication at Vado, foundation treatment and filling operations run concurrently. That arrangement creates a queue between units ready for float-out and seabed locations ready to receive them. [7]

An owner can monitor that queue by location. Record foundation treatment, survey and inspection, required correction, release date, assigned caisson and feasible marine window. A delay in release leaves a finished unit occupying storage or tow-out resources. Advancing fabrication may create a buffer against disruption, but also commits capital and holding capacity. The appropriate buffer depends on fabrication reliability, released locations and the cost of a missed installation window.

The funding schedule reaches beyond the latest placement milestone. Law 71/2026, Article 9(5-quinquies), authorises a further EUR 63 million in 2027 and EUR 100 million in 2028 for Phase A foundation consolidation and project variation. The EUR 163 million is May budget authority; its calendar-year allocation supplies a funding constraint for future certificate forecasts. It gives no date or amount for a contractor's cash receipt. [8, physical 49]

With foundation operations continuing across phases, the marine programme should identify when a shared vessel, specialist crew or survey system can transfer and what work it leaves exposed. A monthly forecast should then show the installation quantities available for certification, the applicable

budget year and expected payment timing. The engineer and finance team can test an accelerated caisson sequence against both receiving capacity and funding authority before ordering additional production.



IMWO planning method: compare released receiving locations with available caissons to expose storage, capital and marine-window consequences. Graphic: IMWO.

Vadhvan: the breakwater award changes the package comparison

Afcons disclosed receipt of VPPL's Letter of Award on 9 June 2026 for a 10.14 km breakwater. Its exchange filing states an award value of INR 5,301 crore excluding GST, equivalent to INR 53.01 billion. This corrects the earlier IMWO record that left the breakwater at technical evaluation. The contractor announcement and exchange filing are two records from the same company. [9, 10]

The breakwater now belongs in the awarded-package account alongside the separate nearshore EPC work. Offshore dredging, reclamation and the protection bund retain their own procurement and financing record. A contractor reviewing the port needs the actual boundary between those works: delivery access, fill containment, exposed construction stages, surveys and handover of interfaces. An LoA fixes a supplier and award value for the named breakwater; field start, progress certificates and acceptance require their own dated records.

VPPL's historical HAM consultation proposes 45% of bid project cost during construction and 55% through deferred annuity. On a normalised 100-unit project-cost basis, 55 units of principal sit in the deferred portion. The concessionaire's peak funding need also depends on certificate timing, construction expenditure, interest, securities and the release conditions. The consultation illustrates

the financing question; final executable terms and any later award need verification against the formal procurement record. [11, physical 6]

The commercial comparison should preserve each package's price basis, payment schedule and responsibility for adjoining work. The breakwater award amount cannot be added to a consultation estimate and presented as a certified port cost. Suppliers considering a quarry or vessel commitment need a released work programme, approved material requirements and the purchaser's actual payment terms. Those documents determine how much capacity to reserve and when that reservation begins to consume working capital.

West Point: make the permitted footprint executable

UNDP Liberia's 4 March 2026 permit publication identifies the MMCRP coastal revetment and requires construction within approved UTM Zone 29N coordinates. Work beyond that footprint needs EPA approval. The published restriction creates a concrete interface between the consented scheme, the drawings offered for pricing and the contractor's access and temporary works. [13]

Before issuing an executable work package, the owner should reconcile the coordinate schedule with toe and crest limits, access routes, working platforms and material transfer areas. A revetment can fit within its permanent boundary while a proposed construction method needs space outside it. The tender should identify which temporary areas are already covered and how a change will be approved and priced.

That review affects marine plant selection and mobilisation timing. A transfer method requiring a different landing point can change double handling, haul distance and the available working window. The estimate should carry the consented method and identify the approval dependency for alternatives. The permit landing establishes a spatial restriction; the detailed scanned conditions, works award and notice to proceed remain separate records to obtain for the next case review.

A completion account that can support a funding decision

The six cases point to a common decision record with project-specific engineering content. At each reporting date, the owner should be able to identify the next functioning reach or operating unit, its remaining work, the release needed to start it and the cost of completing it. This record sits beside the measured account and contract programme. It makes scarce-resource choices explicit.

Record owner	Required entry	Decision supported
Designer / supervising engineer	Asset served, chainage, design boundary and temporary end condition	Whether a reduced or phased scope provides the intended protection.
Materials manager	Grade, dispatch, landing, accepted placement and usable stock	Which reach the next shipment can actually complete.
Marine planner	Released locations, plant availability and closing marine window	Whether to hold plant, change sequence or remobilise later.
Commercial manager	Instruction, measurement basis, certificate and disputed amount	What can be claimed and when it can be certified.
Owner finance team	Committed authority, funding year and forecast payment date	Whether the proposed sequence is financeable through completion.
Operating owner	Survey, transfer, drainage and inspection responsibility	The baseline and budget for maintenance and subsequent repair.

The completion forecast should show two alternatives when money or plant is constrained. Price the workable continuous phase, including its temporary boundary, against the fully funded solution. Include holding, supervision and return mobilisation in both alternatives where they apply. Ebeye explains why an apparently smaller scope can leave a different hydraulic risk; Gorée shows how an urgent intervention can displace another funded obligation.

The material account should use physical classes and accepted locations. Armour, fill, caisson concrete and beach sand perform different functions. Stock held at a port provides resilience only if it meets the required specification and can reach the work front. Report the cost and coverage of that buffer against the planned production rate, then update it when the released sequence changes.

Owners should attach a decision date to approvals that govern plant occupation. The marine planner can state when the current installation or dredging option expires; the engineer can state what survey or inspection releases it; the commercial manager can price the extension or return. A dated choice gives the funding board a cost for waiting and gives the contractor a defined basis for reserving capacity.

At handover, retain the survey, material and inspection records against the reach transferred to the operating owner. The maintenance plan should name the party responsible for outlets, exposed ends, access and post-event inspection, with a budget and response trigger. Ocean City's later repair account depends on that starting condition; Ebeye's combined seawall, drainage and public route carry several operating responsibilities along the same boundary.



An asset-linked completion account connects the remaining physical operation to its commercial decision. Each project keeps its own units, authorities and acceptance criteria. Graphic: IMWO.

Evidence, calculations and case boundaries

This edition reviews six named coastal projects through 22 October 2026. Source dates remain attached to each observation. Ebeye and Ocean City use dated owner, contractor and World Bank records. Genoa combines the 13 October construction release with May statutory budget authority. Gorée's June project paper supplies the financing allocations and Annex 3 implementation plan. West Point uses the official permit publication; its detailed attachment conditions remain a separate review task.

The calculations are 379/1800=21.1% of Ebeye's earlier new-build length, 63+100=EUR 163 million of Genoa budget authority, and 5,301 crore=INR 53.01 billion for the Vadhvan award. The 55/100 HAM illustration uses the historical consultation's principal split. The accompanying register preserves each number's scope and source; its rows are not additive. Material, contract, programme and economic values keep separate bases. The comparison methods and proposed completion account are IMWO analysis.

The original July edition remains available in the publication record. Version 2.0 replaces its construction-stage counts with six dated case files, corrects Vadhvan's award state and develops the relationship between material availability, changed scope, finance and the remaining operation.

Sources

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