

SUMMARY

Shipwrecks and Lagoon Debris Specifications (2018)



Overview

This document is a draft specifications and scope-of-work package prepared by EE&G Environmental Services, LLC for the World Bank to support post-Hurricane Irma recovery in Sint Maarten. It sets out the technical, operational, environmental, and contractual requirements for a contractor to remove, salvage, and dispose of shipwrecks and associated debris in Simpson Bay Lagoon (including Cole Bay and Mullet Bay). The package is intended to underpin a competitive bidding process and guide execution once a contractor is selected. It emphasizes rapid but safe and environmentally compliant removal, structured bid evaluation, clear performance expectations, rigorous waste segregation and disposal protocols, and end-to-end accountability from mobilization through final site restoration.

The document functions as the foundation for contracting—detailing the project scope, contractor responsibilities, environmental safeguards, timelines, pricing and payment structure, reporting, inspection and acceptance procedures, and the intended division of materials and waste streams. While labeled “For Discussion Only” and accompanied by a cover letter to the World Bank, it reads as an advanced draft of the bid and implementation framework for the shipwreck and debris removal operation.

Purpose and Audiences

The document aims to define the specifications for selection and performance of a contractor to recover and remove abandoned and wrecked vessels and associated debris in the Simpson Bay Lagoon following Hurricane Irma, and to ensure proper segregation, handling, and lawful disposal of all materials—particularly hazardous substances—consistent with international and local environmental requirements.

Hurricane Irma left substantial marine wreckage and debris in and around the Lagoon, posing navigational hazards, environmental risks (e.g., fuel, oil, batteries), and impediments to economic recovery and coastal resilience. The operation is a near-term priority within a broader reconstruction, recovery, and resilience agenda supported by the World Bank and Sint Maarten authorities.

This document is intended for implementing agencies and government authorities in Sint Maarten overseeing recovery and environmental protection; World Bank task teams and procurement specialists supporting post-disaster operations and supervision; marine salvage and environmental services contractors with capacity for rapid mobilization in the Caribbean; environmental regulators and port/maritime authorities responsible for permitting and oversight; and local stakeholders (e.g., marina operators, coastal communities) seeking clarity on recovery standards and safeguards.

Contract Implementation, Procurement, and Environmental Safeguards

Contractor Responsibilities and Performance Expectations

- Full responsibility for means and methods, labor, equipment, vessels, and specialized salvage gear.
- Pre-work reconnaissance, risk assessment, and plan-of-operations submission.
- Permitting support and compliance with all applicable local and international regulations governing marine salvage, waste management, and environmental protection.
- On-site HSE management, pollution prevention, containment and spill response, and hazardous materials handling in accordance with recognized standards.
- Protecting sensitive habitats and preventing secondary pollution during recovery and transport.
- Recordkeeping and traceability for all waste streams and materials from point of recovery to final disposition.

Procurement and Bid Evaluation

- **Competitive Bidding:** The specifications outline a structured, weighted evaluation to balance cost with capability and risk management.
- **Evaluation Criteria and Weights:**
 - Pricing: 40% (comprehensive, competitive, and transparent cost proposal).
 - Prior Experience in the Caribbean Basin: 30% (demonstrated familiarity with local waters, logistics, regulations, and storm-related salvage operations).
 - Ability to Meet Project Timelines: 20% (credible schedule, staffing plan, and equipment availability to meet aggressive duration).
 - Insurance/Surety: 10% (sufficient coverage, performance guarantees, and risk transfer arrangements).
- **Exhibits:** Draft combined bid sheet (Exhibit E) accompanies the SOW to standardize bid inputs across firms.

Timeline, Milestones, and Payment Structure

- **Mobilization and Duration:**
 - Commencement within 30 days of Notice to Proceed.
 - Total completion within 90 days (indicative of urgency and the short-term priority status).
- **Payment Mechanism:**
 - 60% mobilization lump sum to cover rapid ramp-up and equipment mobilization.
 - Weekly invoices thereafter, tied to completion verified by inspection and progress reporting.

- Progress Monitoring:
 - Pre-work conference to confirm plans and readiness.
 - Regular progress updates with quantitative tracking (e.g., numbers of vessels recovered).
 - Government inspection checkpoints and a final examination prior to acceptance and release of site.

Environmental Safeguards and Waste Management

- Pollution Prevention and Control:
 - Systematic de-pollution of vessels (e.g., removal of fuel, oil, batteries, other hazardous fluids and components) prior to transport and dismantling.
 - Containment and response measures to avoid releases during lifting, towing, or staging.
- Material Segregation and Disposal:
 - Debris Classification:
 - Burnable: To be processed through controlled combustion/disposal channels where permitted.
 - Non-burnable: Managed through approved disposal or recycling pathways.
 - Metals: Recycled where feasible; potential beneficial uses for steel hulls (e.g., artificial reefs) subject to environmental approval.
 - Household Hazardous Waste (HHW): Collected, containerized, and sent to licensed hazardous waste facilities.
 - Fiberglass: Strictly no sea disposal; managed through approved landfill or specialized treatment.
- Compliance Standards:
 - Environmental requirements and standards align with USEPA/EU guidance and local regulations, creating a robust compliance envelope suited to international good practice.
- Documentation:
 - Waste manifests, chain-of-custody records, and disposal certificates included in deliverables to ensure traceability and accountability.

Operational Approach and Site Management

- Staging and Graving Yard:
 - Contractor to secure and manage an approved site for decommissioning and dismantling.
 - Requirements for site layout, stormwater controls, spill kits, storage for segregated materials, and safe access/egress.
- Equipment and Methods:
 - Appropriate marine salvage equipment, cranes, barges, pumps, containment booms, and dewatering treatments to be provided by the contractor.
 - Methods chosen to minimize environmental disturbance, prevent secondary damage to vessels or habitats, and adhere to safety standards.
- Health, Safety, and Stakeholder Coordination:
 - HSE plan covering personnel safety, public safety, and environmental protection.
 - Communication protocols with authorities for inspections and any incident reporting.

Inspection, Acceptance, and Closeout

- Inspection Regime:
 - Government and client inspections during operations to verify compliance and progress.

- Final examination upon substantial completion to confirm all vessels and debris in scope have been addressed and all waste streams properly closed out.
- Closeout Requirements:
 - Full demobilization: Removal of contractor equipment and materials from the graving yard.
 - Site Restoration: Return of the staging site to pre-operational condition, including cleanup and removal of temporary works.
 - Final Documentation: Submission of as-built or as-recovered logs, waste tracking, and any required certificates for materials disposed/recycled.

Risk Management and Governance Features

- Aggressive timeline mitigated by weighted emphasis on demonstrated capacity and readiness to meet schedule.
- Detailed de-pollution, containment, and segregation requirements reduce the likelihood of secondary contamination; explicit prohibitions (e.g., no sea disposal of fiberglass) prevent high-risk practices.
- Clear documentation, inspection, and acceptance criteria; payment linked to verified progress; insurance and surety requirements to transfer and mitigate financial and performance risk.
- Preference weighting for Caribbean experience encourages selection of firms with regional logistics and regulatory familiarity.

Findings

- A complete, integrated SOW is provided to move rapidly from procurement to execution for vessel and debris removal in Simpson Bay Lagoon.
- The framework balances speed and rigor: a 30/90-day mobilization and completion timeline alongside firm environmental and HSE safeguards.
- Bid evaluation criteria are designed to select a competent contractor on more than price alone—regional experience and schedule credibility are decisive.
- Environmental compliance is central: the document embeds strong de-pollution mandates, material segregation, explicit prohibitions on harmful disposal practices, and full traceability.
- The payment structure (notably a sizable mobilization tranche) reflects the upfront capital required for marine salvage while preserving client control via weekly, progress-based payments.
- Final site restoration and documentation are treated as core deliverables, underscoring a cradle-to-grave approach.
- The referenced exhibits (inventory, map, debris scope, bid sheet) are integral to scoping and standardizing bids, even if not appended in the reviewed PDF.

Lessons Learned

Speed and preparedness matter in post-disaster salvage, so aggressive yet realistic timelines, front-loaded mobilization funding, and selection weighting for schedule deliverability are essential to mitigate cascading environmental and economic risks. Regional experience reduces execution risk, as emphasizing Caribbean-basin experience in scoring helps ensure bidders understand local bathymetry, permitting requirements, weather windows, and logistical constraints. Environmental safeguards must be embedded in contracts rather than added later, with clear and enforceable requirements for de-pollution, segregation, and lawful disposal to prevent environmental liabilities and reputational risk. Material-specific pathways prevent harmful shortcuts by establishing explicit rules for handling oils, batteries, and fiberglass, while promoting beneficial reuse for metals to improve outcomes and reduce landfill burdens. Documentation and

inspections are integral to accountability, as regular reporting, manifesting, and acceptance checks align contractor performance with client expectations and compliance needs. Finally, site restoration planning avoids “project footprints” by requiring full demobilization and restoration from the outset, thereby preventing residual impacts that can undermine public trust and complicate future site use.

Detailed Thematic Highlights

1. Environmental and Safety Emphasis

- De-pollution requirements are among the most critical safeguards. Removing fuel, oil, and batteries prior to cutting, lifting, or transport is mandated to minimize spill risk.
- HHW protocols ensure hazardous items from household or vessel contents are isolated and channeled to licensed facilities.
- No sea disposal of fiberglass prevents microplastic and long-lived pollutant dispersion.

2. Structured Debris Taxonomy and Disposal Pathways

- Clear classification (burnable, non-burnable, metals, HHW, fiberglass) ensures crews handle each stream properly.
- Metals are prioritized for recycling and, where feasible and permitted, beneficial reuse as reef structures.
- Fiberglass, often problematic, is quarantined from marine disposal and routed to appropriate land-based disposal.

3. Procurement Design for Capability and Risk Control

- Weighted scoring balances price and quality, with meaningful weight on experience and schedule feasibility.
- Insurance/surety requirements provide a financial backstop for performance and liabilities, protecting the client and public interest.

4. Project Controls and Verification

- Pre-work conference clarifies roles and mitigates misunderstandings before start.
- Weekly progress billing, tied to verified completion, couples cash flow with oversight.
- Government inspection and final acceptance formalize quality control and completion tests.

5. Completion and Handover

- Graving yard restoration avoids leaving a secondary footprint from recovery operations.
- Final documentation ensures closure with verifiable, auditable records—important for compliance and future program learning.

Limitations and Considerations

Key limitations include that the referenced exhibits (Debris Collection Scope, Vessel Inventory Spreadsheet with images, Shipwrecks Map, Combined Bid Sheet) were listed but not included in the provided PDF, even though they are critical for precise scoping, pricing, and planning. Local permitting and facility availability for specific waste streams (especially fiberglass and HHW) must be confirmed early to avoid bottlenecks. Weather and sea-state constraints may affect the 90-day completion target, and contingency allowances and scheduling windows should be addressed in the contractor’s plan. In addition, stakeholder coordination (port authority, environmental agencies, nearby communities, and marinas) is crucial to smooth execution and public acceptance.

Methodology

Scope of Work–Driven Approach:

- Vessel recovery and graving (Exhibit A) define operational steps for locating, stabilizing, lifting, towing, staging, de-polluting, dismantling, and segregating materials.
- Debris collection scope (Exhibit B) delineates debris types and handling procedures.

Bid Evaluation Framework:

- Weighted scoring system: pricing (40%), Caribbean experience (30%), schedule feasibility (20%), insurance/surety (10%).

Project Management and Controls:

- Pre-work conference, periodic reporting, progress-based invoicing, and government inspections leading to a final examination and acceptance.

Environmental and HSE Protocols:

- Compliance with USEPA/EU/local standards; HHW handling; pollution prevention; spill response; no sea disposal for fiberglass; potential beneficial reuse for metals.

Documentation and Closure:

- Waste manifests and chain-of-custody records; final demobilization and graving yard restoration; complete closeout dossier.

This summary was produced with the assistance of an AI language model based on the original report. The full report is available at sintmaartenrecovery.org/analytical-studies