

Institutional Strengthening & Preparation of
a Zoning & Physical Development Master
Plan for Kingston Harbour

Institutional and Legal
Framework (**Final Draft**)

Submitted to the

National Environment
and Planning Agency

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By  **SMITH
WARNER
INTERNATIONAL**
COASTAL & ENVIRONMENTAL ENGINEERING

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Executive Summary

Background

The poor condition of Kingston Harbour has long been recognized, and over the past few decades there have been several attempts to address its environmental health. However, to date none of these efforts have been successful. The state of the harbour needs to be addressed sooner, rather than later, before the overall costs are so high that rehabilitation becomes infeasible. The logical solution requires that the diverse number of stakeholders be coordinated through an institutional setting, such that ultimately an overall investment plan for the clean-up of Kingston Harbour can be supported and implemented by all.

Based on a recognition that the lack of functional institutional arrangements has been a limiting factor to successful harbour rehabilitation, the Ministry of Land and Environment (MLE) led the Government of Jamaica (GOJ) in negotiations with the Inter-American Development Bank (IADB), to formulate a project for *Institutional Strengthening to Support Environmental Management of Kingston Harbour* (Project No: ATN/SF-8164-JA). The first component of this project, *Component A - Institutional Strengthening and Preparation of a Zoning and Physical Development Master Plan for Kingston Harbour* (KgnHrbr – A), seeks to specifically address the environmental management framework for the Harbour.

This document represents the **third and final draft** of one of the major deliverables for Component A, which is the *Institutional and Legal Framework for the Kingston Harbour Rehabilitation*.

Rationale for Rehabilitation

The economic, social and environmental problems associated with a polluted Kingston Harbour are interrelated and inextricably linked to each other. There has been national debate around the issue of whether or not the benefits of cleaning up the harbour are worth the costs. According to the *1997 Integrated Investment Action Plan* in an evaluation of the benefits of the harbour, the case was made that the benefits far outweigh the cost of rehabilitation. Considering only direct uses, industry and commerce, shipping, fishing, recreation and biodiversity, the present day value of the Kingston Harbour was estimated in 1999 at US\$510.31M per annum. Indirect services or values include coastal protection provided by the Palisadoes tombolo and the mangroves, recently declared a wetlands of international significance under the Ramsar Convention, the waste assimilation and climate modification functions of the mangroves and other wetlands, and the fish nurseries and habitats provided by the reefs,

seagrass beds and mangrove forests, which serve economic production, scientific and educational functions.

The cost of rehabilitation has been estimated at approximately US\$ 211.6M (US\$163.6M for sewage works and US\$34 for Hunts Bay dredging) over the next 15 years and another US\$200M during a second, 10-year, phase. This is a high price to pay for damage that could have been avoided with a shared vision and the appropriate public education, regulatory instruments and preventive and management practices. However, the cost of failure to achieve rehabilitation is immense, in terms of lost revenues, ecosystem services and opportunities for investing in development and enriching Kingston's quality of life.

The Vision for Kingston Harbour

Considerable attention has been given to the activities supported by Kingston Harbour in the days before the degradation of its waters and hydrologic regime. Relatively little attention has focused on what the future could hold for a cleaned-up harbour.

Throughout the world waterfronts are being recognized for their almost magical capacity to act as catalysts for urban regeneration. However, in every case, success and sustainability depend upon generating a shared vision, the establishing of an effective institutional framework and reviewing the vision and progress on a continuing basis.

A cleaned up Kingston Harbour makes possible the realization of a vision of a harbour that is thriving environmentally, socially and economically.

Optimal Outcomes of the Kingston Harbour Rehabilitation Project

<i>Environmental:</i>	<i>Social:</i>	<i>Economic</i>
- Clean water	- Greater equity in the use of resources	- Active and expanding port coexisting with other uses
- Healthy and more extensive mangroves and seagrass beds	- Better standard of living	- Intensified, efficient industrial uses
- Revival of fish stocks	- Expansion of prosperity inward from the waterfront	- Revived and well-managed fishing industry
- Steady stream of sediment to feed the Palisadoes spit	- More housing opportunities	- Self-sustaining/revenue-generating environmental services
- Reduced sediment into Sandy Gully and Hunts Bay	- More recreation opportunities	- Accessible parks, beaches, water sports, continuous waterfront pedestrian and bicycle path
- Healthier coral cover	- More and better jobs	- Cruise ship stopover and services
- A reduced and well-managed solid waste stream	- More available fish as an affordable food source	- High density housing and mixed use developments
		- Hotel and international conference destination (long-term)
- Clean beaches	- Improved health	- Reduced harbour maintenance costs

Based on the status of current plans, the “Givens” for future Kingston Harbour development include:

- Expansion of the Port;
- Expansion of the Airport;
- Improvement of Downtown Kingston and the Waterfront Park, including a multi-modal ferry and transportation terminal and extension of the coast highway to connect with Highway 2000; and
- Restoration of portions of Port Royal.

The plan for Port Royal has already provided a taste of what is possible. At the same time, Port Royal needs to be placed in a wider context. The extensive areas of unused or underused land and obsolete facilities around the waterfront represent an extraordinary resource and make it feasible to consider and select among a wide array of possible uses and developments. Nevertheless, Kingston and Kingston Harbour are relatively small in area and need to be used with great efficiency.

Kingston already has at least one signature structure on which to build - its world-class conference centre. Other opportunities for development include:

- A Harbour Trail;
- A Transportation Terminal and Market;
- Grand Waterfront and Theme Parks;
- Marina Developments and Cruise Ship Berthing Facilities;
- Waterfront Residences;
- Adaptive Reuse and Mixed Use Redevelopment of the General Penitentiary; and
- A Modern Central Fishing Village and Fish Market.

The combination of currently planned projects and some or all of these new ideas will stimulate redevelopment of existing areas and eventually will support hotel construction and expanded conference business.

All of these uses will have extraordinary benefits to the economy of Jamaica and will represent exceptional opportunities for private entrepreneurship and for the well-being of Kingston’s citizens. With the input of the many individuals and groups with a stake in the harbour and its waterfront, the vision will continue to take shape and become the focus of collective and individual action.

International experience with harbour cleanup and waterfront redevelopment makes it clear that achievement of the vision for Kingston Harbour needs a comprehensive and integrated management structure, able to address a large

area of influence, attract private as well as public sector involvement and funding and maintain focus and interest over a long period. Ideally, the structure needs to be seen as and perhaps also headed by a visible and empowered champion, sheltered from the shifts in policy and emphasis that accompany political incumbency and leadership.

Consideration of options for determining the desirable institutional framework to governing harbour pollution as well as waterfront use and development management begins with an assessment of the legal framework for harbour management.

The Legal Regime

Legislation relating to Kingston Harbour has traditionally been shaped by and limited to the context of shipping. This fact has left its pronounced imprint on existing legislation and, in particular, older legislation of pre-environment awareness vintage.

There are several pieces of legislation that have a bearing on the activities within and on the periphery of Kingston Harbour. The most important and influential among them are:

- The Harbours Act, 1874
- The Harbour Lights and Lighthouses Act, 1900
- The Harbour Fees Act, 1927
- The Port Authority Act, 1972
- The Beach Control Act, 1956
- The Natural Resources Conservation Authority Act, 1991
- The National Solid Waste Management Act, 2002
- The Public Health (Nuisance) Regulations, 1995
- The National Water Commission Act, 1963
- The Shipping Act, 1998
- The Maritime Areas Act, 1996

Various other pieces of legislation concern the harbour. The most noteworthy in terms of harbour rehabilitation are those that relate to the pollution sources affecting the harbour. Consideration of these pollution sources as discrete subject areas in their own right is warranted, as this helps to identify the roles of various institutions and actors as regards polluting the harbour.

The main weakness of the legislative regime with respect to rehabilitation of Kingston Harbour is that there is no entity with specific responsibility, in law, for management of the harbour as a vital natural resource of great economic value (although NEPA has broad responsibility for the effective management of the physical environment of Jamaica, including Kingston Harbour).

There is no mechanism buttressed by legislation for the effective co-ordination of the various actors, activities and uses of the harbour.

The legal regimes for the various sources of harbour pollution are in urgent need of modification to address loopholes or gaps that have developed over time and undermine their effectiveness with respect to addressing harbour pollution and cleanup. The urgency is particularly great in the case of sewage, where responsibilities among different agencies need to be rationalized and exemptions given to particular government entities revisited.

In the case of ship-source pollution, there is also the urgent need to have legislation provide adequately for the fixing of liability and the obtaining of ample compensation in the event of a major spill of oil or other polluting substance in the harbour.

There is also need for legislation to address ship-generated waste and other harbour pollution-related matters that are subject to various international treaties.¹

At the international level, Jamaica needs to consider becoming a party to the **International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004**, which contains measures to prevent the potentially devastating effects of the spread of harmful aquatic organisms carried by ships' ballast water, to living resources of the harbour. The Convention requires all ships to implement a Ballast Water and Sediments Management Plan and carry out ballast water management procedures to a specified standard.

Jamaica should also consider becoming a party to the **International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001**, which prohibits the use of harmful organotins in anti-fouling paints² used on ships and seeks to establish a mechanism to prevent the potential use of other harmful substances in ships' anti-fouling systems.

Towards addressing the threat that the transit of radioactive/nuclear materials pose to the harbour, Jamaica also needs to accelerate its efforts at regional and international levels to secure changes to the applicable international rules, which allow for such transit.

¹ Hyman, Hugh C.: Ship Generated Waste: Jamaica's Legislative Provisions vis-à-vis MARPOL 73/78 Requirements, 1996 West Indian Law Journal, Vol. 21, Nos. 1 & 2, pp 152-185.

² Anti-fouling paints are used to coat the bottom of ships to prevent sea life such as algae and mollusks attaching themselves to the hull.

The Current Institutional Setting and Arrangements

At the broad formal macro-level of public sector governance in Jamaica, the institutional framework within which policy and management decisions are made and implemented in respect of Kingston Harbour is that of a ministerial system of government. It is circumscribed by **The Jamaican Constitution**, encompassing the Cabinet, Cabinet sub-committees, ministries, departments and agencies of government and formal ad hoc arrangements.

The Cabinet is responsible for setting national policy, with the portfolio Ministries concerned being responsible for particular subjects. The entailed work is carried out through the administrative organ of the Ministry, with portfolio/subject responsibility and departments, bodies and agencies operating thereunder with their particular sub-portfolios.³

Within this formal institutional governance structure, governmental departments, agencies and bodies are defined, constrained and propelled by mandates normally underpinned and delineated by particular applicable legislation, with entities contending for scarce resources to address items on budgets ultimately dictated by such mandates.

This broad formal institutional setting co-exists with and appears to be at times affected (or infected) by informal or contra-formal features that are noteworthy, at least *en passant*, since they may influence the efficacy of any institutional arrangement adopted, adapted or reaffirmed for Kingston Harbour.

These features include the bypass of formal institutional arrangements and the over-reaching of legal mandates reflecting a disconnect between *de jure* and *de facto* responsibility. Such a situation obtains where expediency considerations result in an agency that has the funds but lacks the requisite legal mandate carries out particular functions of another less liquid or pecunious agency. It also obtains when a function is exercised by a non-mandated agency of a “trusted implementer” or “mover and shaker”. There is at times a protracted time lag between agency practice and providing the requisite legal underpinning for the practice concerned. Further, there is the problem of the success or fate of particular institutional arrangements being overly-dependent on the level of interest and clout of particular incumbents. Accordingly, an institutional arrangement may fail to deliver desired results simply because of insufficient interest or effort on the part of the particular incumbent Minister(s) with the portfolio responsibility. Otherwise, various myopic and other considerations of expediency and a timorous proclivity vis-à-vis needed change underlay and have served to undermine or even determine institutional arrangements embarked upon.

³ See: **The Jamaican Constitution, Section 77(1)**.

Several government entities⁴, under the jurisdiction of different Ministries⁵ have important Kingston Harbour-related statutory responsibilities.

Entities from both the public and private sectors own and/or operate on lands within or on the periphery of the harbour.

A number of entities have important statutory responsibilities in respect of the main sources of pollution of the harbour and there are private sector entities established for and engaged in restoring nearby built-up areas.

However, there is no single entity with focused-responsibility, for the harbour as a vital physical and economic resource to be managed accordingly.

Existing composite institutional arrangements/mechanisms to coordinate the harbour's various actors and activities, or with the potential to do so, are The Council on Ocean and Coastal Zone Management and the Kingston Harbour Committee.

Institutional Framework Selection: Criteria & Options

Existing legislation and institutional arrangements were, in general, developed in a piecemeal fashion, to meet particular objectives. These objectives reflect the, sometimes disparate foci of the institutions which administer or were established under the respective pieces of legislation. None of the objectives can be said to match the expansiveness of the emerging vision for Kingston Harbour and its waterfront.

It is clear that realization of the desired outcomes of Kingston Harbour cleanup and the economic benefits associated directly and indirectly with them will require carefully orchestrated management. The following is a list of the main functions that the desirable management entity would undertake:

Core Functions:

1. Ensure treatment of Kingston Harbour as a vital physical/economic resource to be properly managed;
2. Champion and oversee the harbour's rehabilitation, conservation, management and development (in accordance with vision, statutorily delineated plan, objectives, stipulations and performance standards);
3. Explain and demonstrate the linkages between cleanup and private investment;

⁴ including NEPA, the Port Authority, the Maritime Authority of Jamaica and the KSAC Council and St. Catherine Parish Council.

⁵ including the Ministry of Land & Environment, the Ministry of Transport & Works and the Ministry of Local Government Community Development & Sport.

4. Engage the private sector, securing and sustaining its interest as willing partners and developers and facilitating its financial input;
5. Establish and administer a wetlands mitigation bank;
6. Promote the establishment of a green harbour front;
7. Ensure financial sustainability and secure funding going forward;
8. Serve as initiator/facilitator of private sector entity/trust devoted to Kingston Harbour rehabilitation;
9. Enter into agreements, memoranda of understanding with relevant entities for management of the harbour;
10. Make regular reports to Parliament & civil society to maintain interest, attention;
11. Set targets, arrange events and communicate with the media.

Support Functions:

12. Coordinate and assure the performance of planned point-source clean-up projects;
13. Advise on and monitor actions throughout the entire area of influence aimed at curbing non-point sources as well as point sources of pollution;
14. Promote a holistic approach to the hinterland cleanup and management;
15. Encourage integration of physical cleanup projects with a set of supporting actions;
16. Advise on, monitor and coordinate water use and land use around the harbour;
17. Maintain a database on the harbour, including its value, water quality and general state as well as other pertinent information;
18. Assist in providing expert evidence as regards damage to Kingston Harbour *re* spills in harbour or other pollution incidents;
19. Prepare drafting instructions for needed legislative changes for increased harmonization and effectiveness
20. Consider relevant international treaties, rules, regulations, practices and promote their application as appropriate.

Analysis of the institutional status quo and feedback from consultations suggest that the selected institutional structure should not only be able to carry out the functions listed above but also meet as many of the following criteria as possible:

1. Be a strong management entity, consistent with the pattern established for or learned from management of other major bays;
2. Support rather than supplant or duplicate the mandated roles and responsibilities of existing stakeholders;
3. Have the authority and status to co-ordinate the various actors and activities with respect to the harbour;
4. Be able to sustain a specific focus on Kingston Harbour rehabilitation and redevelopment, perhaps over several decades;
5. Be able to ensure that Kingston Harbour's needs do not get lost or subsumed in the morass of an existing entity's extensive remit;
6. Provide functional permanence/institutional longevity with minimal risk of loss of focus due to changes in leadership;
7. Have permanent conduits and ready channels to all actors at the highest levels of decision making;
8. Be able to secure funding on a sustained and independent basis;
9. Be able to engage the private sector, as willing partners in financing and implementing harbour cleanup and waterfront improvement and development or redevelopment;
10. Be able to take a holistic approach to activities and realities of the hinterland related to the clean-up and management of the harbour;
11. Be able to achieve an appropriate balance among competing uses and values of the harbour, its resources and waterfront lands; and
12. Require the least new cost, bureaucracy and legislation consistent with meeting the criteria listed above, in consideration of resource constraints.

It makes clear that achievement of the vision needs a comprehensive and integrated management structure, able to address a large area of influence, attract private as well as public sector involvement and maintain focus and interest over a long period.

Facilitating the Vision: Recommended Institutional & Legal Changes

The analysis suggests the need for an entity (perhaps, "The Kingston Harbour Corporation") with the breadth and authority to lead and coordinate, but not supplant, the appropriate functions of existing agencies and other stakeholders. The entity also needs to be a composite one with representation from various

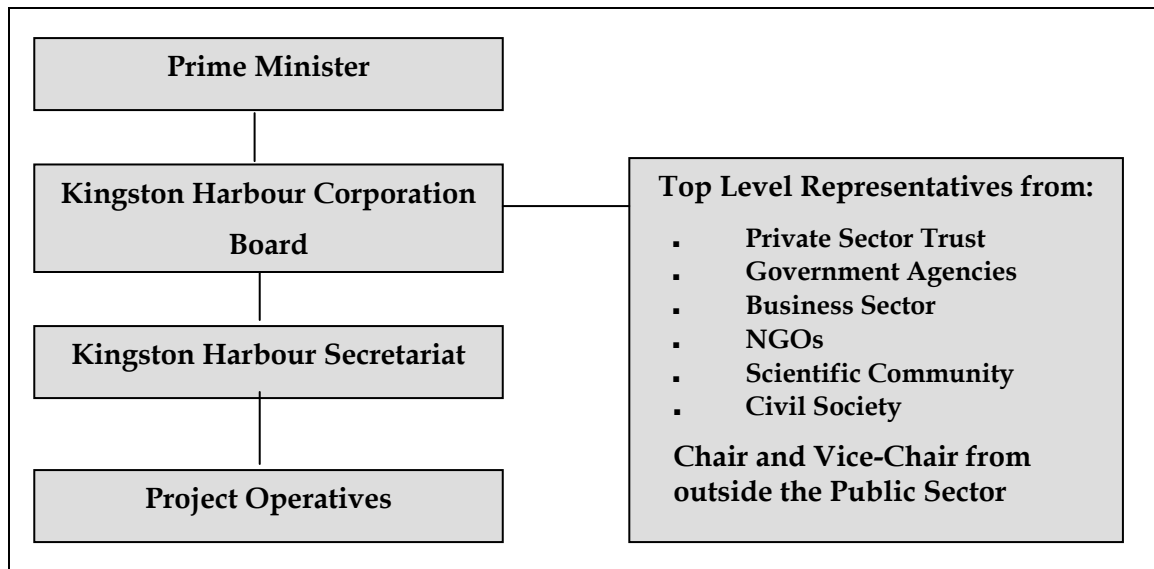
interested stakeholders, not a non-composite entity operating under the aegis of a single Minister.

It would be important to confer on the new entity the status necessary to manage Kingston Harbour and its clean-up and redevelopment effectively. This would require making it a permanent establishment, buttressed by legislation, and reporting to the Prime Minister, with a Board of top-level representatives from the relevant public sector entities, the business community, NGOs, the scientific community and other stakeholders. The positions of chairman and vice-chairman would be held by persons outside of the public sector, with the chairman being ideally a person with sufficient dynamism, national clout and influence to champion effectively the Kingston Harbour cause.

A small secretariat would be required for the entity, membership of which could utilize personnel from the current Kingston Harbour Project unit, and personnel seconded from government entities so as to minimize costs.

The new entity should play a catalytic role in the establishment of a private sector/civil society trust towards the rehabilitation of the harbour, which would have representation on the Board of the new entity and be instrumental in garnering funding to complement that obtained by the new entity as well as help to otherwise attract private sector and public support.

An outline schematic of such an entity is presented following.



Legislation is needed to:-

- Provide for establishment of the Kingston Harbour Corporation its mandate and jurisdiction;

- Rationalize and clarify responsibilities of various governmental agencies as regards particular pollution-sources - especially sewage, the role of the NWC, government developers exempted from particular legislative controls *re* provision of sewerage facilities in schemes and matters such as the cleaning of gullies and provision of sea defenses, for which there is no government agency specifically mandated with overall or residual responsibility;
- Address liability and compensation for pollution of Kingston Harbour from ship-source pollution in the event of any major spillage of oil or other polluting substance, widen what can be claimed for in court in the event of such spillage, and address ship-generated waste and other harbour pollution-related matters which are subject to various international treaties.;
- Provide incentives for utilization of environmental management systems for entities on the rim of or potentially affecting the harbour, etc., (amend The Urban Renewal (Tax Relief) Act, 1995) and The Industrial Incentives Act, 1956;
- Generally improve effectiveness of existing applicable legislation; and
- Provide regulations or standards regarding what is considered good agricultural practice vis-à-vis pollution of the harbour by agricultural runoff.

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1. Introduction

1.1. Project Background

Kingston Harbour is one of the world's remarkable bays, not only in terms of its status as the seventh largest natural sheltered harbour but also in terms of the value of its ecosystems and the opportunities it offers for enrichment of the urban environment.

The Harbour is the main receiving water body for the city of Kingston, and accepts inflows from adjacent rivers, gullies, industrial and commercial facilities, as well as sewage treatment plants. Furthermore, Kingston Harbour is the primary port for the island, handling large volumes of marine traffic and having the associated exposure to vessel-generated wastes and pollutants. The harbour water quality is badly degraded and numerous studies have indicated that, in fact, Kingston Harbour is contaminated and has suffered significant environmental degradation over the past several decades.

The poor condition of the harbour and the cost of allowing it to continue to degrade have long been recognized. Over the past few decades there have been several attempts to address its environmental health. However, to date none of these efforts has been successful. It is now apparent that the failure of previous attempts to clean up the harbour has many causes, including:

1. Lack of clarity as to the authority for and responsibilities of the many institutions that have a role in the use and management of the harbour; ;
2. Limited communication and coordination between and among the relevant agencies.
3. Limited sustained financing for the cleanup activities;
4. Lack of transparent processes and criteria for assessing the suitability or compatibility of land and water uses and users and for determining which plans should supersede others for development of the same area;
5. Widespread lack of awareness of the impact of upstream sources of pollution on the harbour;
6. Lack of understanding about how integrated management should be carried out by individual entities and what this means for financial and operational planning, downstream and upstream of the sources of pollution; and, most fundamentally,
7. Lack of political will to take on a matter that has had little success in the past and seems to be larger than any one administration and single administrative period and crosses many jurisdictions and portfolios.

This situation needs to be addressed sooner, rather than later, before the overall costs are so high that rehabilitation of the harbour becomes infeasible. The solution is for an overall investment and management plan for the clean-up of Kingston Harbour that is supported and implemented by all. This requires an institutional framework that can:

- Engage the diverse stakeholders through an understanding of the benefits accompanying rehabilitation; and
- Coordinate and monitor their actions.

Based on a recognition of the previous limiting factors to successful harbour rehabilitation, the Ministry of Land and Environment (MLE) led the Government of Jamaica (GOJ) in negotiations with the Inter-American Development Bank (IADB), to formulate a project for *Institutional Strengthening to Support Environmental Management of Kingston Harbour* (Project No: ATN/SF-8164-JA). The first component of this project, *Component A - Institutional Strengthening and Preparation of a Zoning and Physical Development Master Plan for Kingston Harbour* (KgnHrbr - A), seeks to specifically address the environmental management framework for the Harbour.

This document represents the **third and final draft** of one of the major deliverables for Component A, which is the *Institutional and Legal Framework for the Kingston Harbour Rehabilitation*.

1.2. Harbour Rehabilitation Initiatives

Awareness of the deterioration in the condition of Kingston Harbour first emerged in the 1960's and serious studies began in 1970. Since then the deterioration has led to the "progressive reduction of fishing use to practically zero levels and [to the disappearance of] primary contact tourist use from the beaches of the interior of the harbour."⁶ Several studies have been performed and remedial actions have been proposed but so far relatively little progress has been made in implementing these actions, mainly due to a lack of financial resources.⁷

The primary physical contributors to the degradation of Kingston Harbour's water and interdependent ecosystems have been identified as:

- Untreated or inadequately treated sewage;
- Solid waste;

⁶ Sentar 1993; Villasol et al. 1997

⁷ Integrated Management of Bays and Coastal Zones in the Wider Caribbean Region: Facts and Needs - Antonio Villasol, Manuel Alepuz and Jesus Beltran

- Ship-generated waste;
- Sediment;
- Industrial effluents and oil spills or contamination; and
- Agricultural runoff (nutrients and other chemicals).

All these sources are amenable in varying degrees to technological solutions, and improvements have been or are being designed and costed. The planning of sewage collection and treatment has received the most attention, if not action, until recently. Under this current study, Component B has assessed the magnitude of the industrial effluent contribution to adverse harbour water quality, while Component D has examined approaches to and sites for receiving and treating ship-generated waste. Sedimentation has been addressed through sediment removal in Hunt's Bay. Proposed approaches to solid waste management include improved collection, conversion of Riverton to a sanitary landfill, and two untried solutions, gully garbage traps and gully-mouth floating fences.

Management of the causes of excessive sedimentation (the rate of erosion in the upper Rio Cobre and Hope River basins), agricultural runoff, and the nature and volume of solid waste have received less attention. This has most likely been due to the fact that they are the products of more diffuse, non-point, activities and therefore require more than technological solutions. In fact, for a sustainable outcome of efforts to improve the quality of the harbour, the full array of improvement activities, both technological and non-technological, needs to be undertaken from a holistic viewpoint. The harbour is the downstream recipient of the myriad of natural processes and human activities at work throughout the contributing watersheds. Its health is one of the most visible and certainly the most economically significant signs of the overall health of the metropolitan area and its surroundings.

1.3.Document Objectives

This deliverable addresses requirements and options for establishing an appropriate institutional and legal framework for the cleanup of Kingston Harbour. To provide the necessary broad spatial and temporal context for the presented recommendations and stakeholders' decisions, the document addresses the following topics:

- The Previous Cleanup Actions;
- The Cost of Cleanup;
- The Benefits of Cleanup – The Vision;

- Existing Institutional Conditions: Management, Legislation and Issues of Legal Responsibility;
- The Need for Comprehensive and Integrated Management;
- Institutional and Legal Recommendations; and
- Implementation Plan (Framework).

2. The Costs of Degradation and Clean Up

2.1. The Financial Cost of Harbour Clean-up

The economic, social and environmental problems associated with a polluted Kingston Harbour are interrelated and inextricably linked to each other. The cost of rehabilitation has been estimated at approximately US\$ 211.6M (US\$163.6M for sewage works and US\$34 for Hunts Bay dredging) over the next 15 years and another US\$200M during the second, 10-year, phase⁸. This is a high price to pay for damage that could have been avoided with a shared vision and the appropriate public education, regulatory instruments and preventive and management practices.

2.2. The Cost of Not Implementing a Cleanup Program

There has been national debate around the issue of whether or not the benefits of cleaning up the harbour are worth the costs. According to the 1997 *Integrated Investment Action Plan* in an evaluation of the benefits of the harbour, the case was made that the benefits far outweigh the cost of rehabilitation.⁹ Considering only direct uses, industry and commerce, shipping, fishing, recreation and biodiversity, the present day value of the Kingston Harbour was estimated in 1999 at US\$510.31M per annum (Table 2.1). Indirect uses include coastal protection of mangroves and waste assimilation, economic production and education.¹⁰

Based on these direct benefits alone, Kingston Harbour has great significance for the national economy. However, these estimates are only for uses in their present condition. They reflect neither the much higher past values (for fishing and recreation), nor the potential for growth in the full range of uses that could be achieved with a clean harbour, well managed land and water use, and active public and private investment.

Moreover, they also conceal the value of the harbour's ecological importance and the cost of decades of degradation and alteration of this natural system.

⁸ GEF Project RLA/93/G41: National Coordinator's Country Report for Jamaica - Kingston Harbour, April 1999, Tina Williams et al., *Environmental Degradation In Kingston Harbour: Managing A Common Resource*, 2003, based on unpublished GOJ documents

⁹ 23 p.9 Ministry Paper 22/99

¹⁰ Note: portions of this section draw on summaries of available documents compiled by Tina Williams et al.

Table 2.1 **Summary of Annual Benefits of Kingston Harbour, 1999¹¹**

<i>Activity</i>	<i>Present Value (Millions US\$)</i>
Industry and Commerce	
- Formal	458.10
- Informal	5.10
Shipping	40.00
Fishing	6.60
Education	0.37
Recreation	0.14
Total Present Value	US\$510.31M

2.2.1. Environmental Costs

Man-made changes over the last 30-40 years have not only degraded the harbour's water quality but have also changed the way in which the entire system operates. Each one of these changes has environmental costs that can be valued in terms of the economic and social impacts that may, and often do, result.

- Construction of the Causeway in the late 1960s and subsequent port and transportation projects have resulted in the loss of some 50% of the mangrove in the harbour, loss of a major nursery for fish and especially for shrimp, siltation of Hunt's Bay and alteration of water circulation in the harbour.
- The wholesale loss of mangrove in Hunt's Bay has had a huge monetary cost, both in terms of the loss of most of Kingston Harbour's lucrative shrimp fishery and in terms of the loss of services performed by mangrove ecosystems, such as:
 - Fish nurseries,
 - Water filters,
 - Sediment traps,¹²

¹¹ Ibid.

¹² "One element of cost, that of the frequent need for cleaning of gullies and drains to remove sediment and other material washed down, is that the Sandy Gully, a major source of inflow to the Harbour is, for some many meters up the mouth of the gully, almost completely filled with mangrove. The negative aspect of this

- Flood regulators, protecting shorelines against storms, storm surges and tsunamis,¹³ and to some degree against sea level rise,
 - Carbon sinks, and
 - Contributors to reducing heat island effects.
- The shortcomings of solid waste management contribute heavy waste loads to the gullies and harbour, harming aquatic species, creating visual blight and endangering health and safety through the blocking and flooding of gullies.
 - Organic pollution, resulting from the lack of comprehensive and effective sewage collection and treatment and from agricultural runoff, has led to the general loss of biodiversity and habitats and fish populations and diversity.
 - The decline in fish catch has impacted large numbers of fishers and their dependents. It has, in turn, encouraged over-fishing of the surviving species, reducing their ability to regenerate and maintain long-term species integrity.
 - The increase in alien invasive species that can cope with higher levels of pollution can jeopardized the port’s competitiveness.
 - The loss of biodiversity in the harbour may be considerable, but no suitable quantitative data exist to permit an adequate economic analysis to be undertaken.
 - The loss of biodiversity in the harbour (separate from impacts on economic production, e.g., fishing, shrimping, crabbing) may prove over time to be the single greatest economic loss resulting from pollution. Few data exist at present to support an adequate economic analysis. For example, while Refuge Cay is a significant attraction for boat tours, its value in terms of tourism dollars is only a fraction of its global value as an important bird habitat.

Kingston Harbour’s value as a port depends in large part on the protection provided by the Palisadoes. Indeed the physical, biological, social and economic character and well-being of the Kingston region are in many ways shaped by the tombolo. The physical integrity of the Palisadoes requires longshore drift to

is that the gully is incapable of functioning according to design and is subject to flooding. However, on the positive side, the mangrove in the gully is serving as a trap for sediment and performing waste assimilation services, thereby providing some benefit.” Tina Williams.

¹³ “The dense mangrove forests stood like a wall to save coastal communities living behind them,’ said M.S. Swaminathan, Chairman, M.S. Swaminathan Research Foundation (MSSRF), Chennai. The MSSRF will soon be publishing a scientific document ‘Tsunami and mangroves’ highlighting the need to conserve and rehabilitate mangroves as the frontline defence against tidal forces.” Quoted in: G. Venkataramani, ‘Mangroves Can Act as Shield against Tsunami.’ The Hindu, 27 December 2004

transport and deposit a fairly steady stream of sediment from the Hope, Cane and other eastern rivers. It is critical that those rivers remain in or be returned to their natural state to ensure the continued effectiveness of this natural process, which has repaired several breaches after hurricanes and tidal waves.

Mangrove forest and wetlands also play a role in stabilizing the Palisadoes. Continuing and future removal of mangrove anywhere around the harbour for fill and new development needs to be accompanied by replanting at a rate that at least compensates for the acreage removed.

2.2.2. Economic Costs

Shipping. Kingston Harbour is a strategic location and is convenient for many international shipping lines. The harbour possesses modern dry bulk terminals for handling gypsum, limestone, cement and grain cargoes. There are timber wharves and specialist facilities to handle bulk petroleum products of oil refineries. The strategic location of the port has made it a very convenient stop for international trading ships. With the construction of Newport West and Gordon Cay, Kingston Harbour has become one of the largest transshipment ports in the Caribbean. During 1999, shipping earned US\$40m.

There is also an extensive service industry that plays a key role in servicing vessels, coordinating vessel calls and departures and cargo handling arrangements. The most beneficial activity however, is the trans-shipment operations that are carried out at Port Bustamante, involving ocean-going vessels throughout the year. In April 2003, the Port Authority of Jamaica announced a further expansion of the port, estimated to cost J\$3.5 billion.

Despite the critical importance of the industry to the national economy, shipping has created numerous environmental problems for the harbour and is also threatened by some of those problems. As a consequence of the level of shipping traffic, there has been an increase in the amount of ship waste, including oil residues, sewage, anti-fouling paints and cleaning agents, solid waste, medical waste and hazardous waste deposited into the harbour. The impact of pollution on shipping is also being felt. Ships that have docked in Kingston Harbour and taken on ballast water on departure (to assist with navigability) risk receiving fines at their next port of call for releasing polluted water¹⁴. Thus the poor water quality jeopardizes Kingston Harbour's competitive advantage.

¹⁴ Sources: Marine Pollution: Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain (February 2000 - Washington, DC: GAO); bluewaternetwork.org/press_releases/pr2003apr09_ss_ballaststlmt.pdf for press release from the Environmental Law Center re Carnival Cruise Line fine

The management of the shipping and port industries and the net revenues derived from them are also affected by the need for dredging. The cost of the recent/current dredging program is US\$34 million. This effort was planned to eliminate the need for further dredging for fifteen years. However, there is concern about the financial and environmental costs of repeated dredging.¹⁵

Kingston Harbour Fisheries. Kingston Harbour supports recreational, subsistence and commercial fisheries. The eight fishing beaches and landing sites around the harbour are used by 3,386 registered fishers (Table 2.2). Of these, 50% depend directly on the harbour for their livelihood, while the other 50% depend on the harbour for bait to exploit other fisheries outside the harbour. These fishers have a significant multiplier effect, creating employment for an unknown number of boat builders, boat repairers, gear repairers, net makers, pot makers, loaders, unloaders, scalers, gutters, vendors and their families. For many, these occupations are their only or major source of employment. Fishers also support recreational beach users and provide a year-round source of nutrition and food security. Sprat is a source of “affordable” protein for many within the Kingston and St. Andrew and surrounding areas and thus contributes to poverty alleviation. However, the harvest is diverse enough to supply rich and poor alike and to provide an essential element in a future tourism industry in the Kingston area.

Table 2.2 Kingston Harbour Fishing Beaches, Fishers and Boats

<i>Fishing Beach</i>	<i>Fishers</i>	<i>Boats</i>
Greenwich Farm	552	167
Rae Town	327	122
Kingston Fishing Complex	424	116
Hunts Bay	831	192
Port Royal	500	179
Hellshire	267	54
Harbour Head	121	28
Port Henderson	346	140
Totals	3,386	998

Information based on Fisheries Division’s Licensing and Registration System

¹⁵ Capt. Hopeton Delisser, Harbour Master, personal communication

Despite its importance, even under current conditions, very little information is available on the recreational and subsistence fisheries activities. Fishery resources include lobsters, shrimps, conch, coastal pelagics (sprat, etc.), reef and reef associated finfish (snapper, parrot, etc.) and larger pelagics such as dolphin fish, kingfish, mackerels and jacks. Up to 1967, the harbour had an annual yield of between 400,000 - 800,000 pounds of fish, mainly sprat and herring, plus a very significant shrimp catch. According to the Fisheries Division, the estimated value of the harbour fishery (1526 MT) in 1998 was J\$336million (considerably above the previously quoted 1999 estimate of J\$210.5 or US\$6.60m) but fell dramatically to J\$242million (1100 MT) in 2002. The loss of shrimp nurseries in the mangroves of Hunt's Bay to causeway and port construction and subsequent siltation has been especially damaging to both fishers' livelihoods and the overall economy. Fish species as well as stocks have experienced declines due to continued deterioration of the water quality. This has contributed to fishers venturing further offshore for their catch.

In addition to the external forces of pollution and mangrove removal, the unsustainable practices of some fishers further jeopardize the surviving fish stocks. The prevalence of these practices may be linked to the lack of respect and legal status accorded to fishers. The finite beachfront lands, lack of fishing beach tenure and recognition of fishers rights by "developers," as well as finite marine and harbour space have resulted in serious conflicts with other users of the harbour.

Industry and Commerce. Commercial and industrial activity, both formal and informal, such as oil refining, cement production, electricity generation, food production and distribution, and fish vending, have been sited along the shore of the harbour due to its strategic and locational advantages. As such, the Kingston Harbour has emerged as a vital economic resource generating significant resources for both the private and public sector.

Recreation and Tourism. The harbour was once described as "the most intensively used recreational facility in Jamaica", offering "the greatest range of attractions of any single environment in the island" (Wade 1976). Among the recreational activities associated with the harbour were swimming, skiing, sailing, line fishing, snorkeling and sunbathing. Many of these recreational activities have since disappeared as a result of the continued deterioration of the water quality. Based on visitor surveys, it has been estimated that the number of persons visiting beaches around the harbour declined by 10,260 (13%) between 1987 and 1997. Small numbers can be seen at beaches along the harbour rim, despite hazardous conditions. However, recreational use is now generally

limited to bathing at Hellshire and Fort Clarence beaches, boating and line fishing in the Causeway area.

Kingston Harbour has been recognized as having potential for cultural, historical and nature tourism at Port Royal and elsewhere in the region and, consequently, attraction for cruise ships. Although the cruise industry has shown interest, the reluctance of ships to dock in Kingston Harbour and the visual blight along parts of the shoreline could be obstacles to realizing Kingston's tourism potential.

Health. "The health costs are associated with persons falling ill from eating fish/other marine life that is polluted by heavy metals and other toxic substances, or from skin, ear, nose and throat infections. It should be noted however that the incidence of this kind of pollution is said to be low.¹⁶ There is also the potential for increased personal costs (especially insurance) and national costs (relocation, provision of goods and services to flood victims, rescue efforts and temporary housing) for those persons housed in areas prone to flooding as a result of removal of mangrove, filling in of the Hunts Bay etc."¹⁷

Research and Education. The harbour also plays a role in education. With the location of the Caribbean Maritime Institute and the UWI Port Royal Marine Laboratory (PRML), the harbour contributes significantly to education. In addition, the Artemia Shrimp Project being undertaken at the laboratory can potentially be another viable economic activity. Following much research it has been discovered that there is an organism in the Kingston Harbour called *ascidian* which is thought to contain cancer-reducing chemicals. The harbour also provides an ideal opportunity to observe the behaviour of sea birds, as over 16 species make the harbour their home. However, the degrading environmental quality puts both these educational and economic benefits at risk.

2.2.3. Social Costs

Most importantly, social costs include the loss of income of fishermen and related workers due to reduced fish stocks and fishing and landing areas, as well as the consequent reduction in a source of food that is affordable at all income levels.

In addition, the years of decline and neglect have meant that many Kingston residents have not been able to benefit from employment in new businesses that might have been established around a clean and well-planned harbour.

¹⁶ Mona Webber Presentation to REP Conference 2003

¹⁷ Williams, et al., op. cit.

Indirectly, the state of the harbour may also have acted as a deterrent to investment in new housing and the upkeep of housing close to the waterfront, in turn accelerating the expansion of the urban area into the hills and increasing pressure on agricultural land to the west.

Social costs of the polluted state of the harbour also include the loss of recreation, such as Cross-the-Harbour swimming meets and a reduction in the quality and use of bathing beaches. Gun Boat, Buccaneer, Harbour Head, Bournemouth, Sirgany and Paradise Street beaches have all been downgraded.¹⁸ Social costs include reduced opportunities to get close to the water as a result of planning decisions that have given insufficient attention to the importance of public waterfront access. They also include the loss of scenic vistas and visual pollution resulting from unmanaged solid waste. Some of these values can be calculated by determining the revenues, such as beach fees, lost from a reduction in participation. Indirect values can be determined by conducting surveys of willingness to pay for such amenities as parks, trails and vistas.

As in the case of studies of Chesapeake Bay cleanup costs in (Appendix I, Case I, we can anticipate that the economic value of the cleaned up Kingston Harbour will dwarf the costs of restoration. In addition, however, just as the assessment of the Chesapeake program argues, Kingston Harbour cleanup will also have fundamental intangible benefits to the nation in the protection of a unique cultural, historical and natural heritage.

¹⁸ IIAF

3. The Benefits of Clean Up: A Vision for Kingston Harbour

3.1. The Need for a Vision

The numerous studies of the state of Kingston Harbour, including the UNDP/GEF¹⁹ study which ended in 1998, have not succeeded in attracting a concerted and sustained effort to improve the Harbour. As discussed further in Chapter 6, the most significant of many reasons for this failure has been the absence of a vision of a cleaned up Harbour. An appropriate vision needs to present not only the benefits of restored ecological conditions and services but also the activities in an around the Harbour that cleanup would make possible.

Concern for the Harbour until recently has had a scientific and engineering focus. Private sector and civil society groups have found little to excite them and may even have felt excluded from debate. The focus on environmental quality and infrastructural logistics is justifiable but incomplete. A balanced vision will pay attention to expanding opportunities for investment and economic development, to uplifting the quality of life and improving aesthetics. A comprehensive vision can engage the private sector and communities and release Harbour rehabilitation and development from the restraints of political priorities.

Considerable attention has been given to the activities supported by Kingston Harbour in the days before the degradation of its waters and hydrologic regime. Relatively little attention has focused on what the future could hold for a cleaned-up harbour.

Throughout the world waterfronts are being recognized for their almost magical capacity to act as catalysts for urban regeneration. However, in every case, success and sustainability depend upon generating a shared vision of the possibilities and reviewing that vision on a continuing basis. Recognition of the value of previously overlooked or underutilized waterfronts in the United States began with Baltimore's Inner Harbour in the early 1960s (see Appendix I, Cases II and III). Many European cities also ignored their waterfronts until economic changes and development pressures forced recognition. Appendix I, Case IV describes Amsterdam's struggle to balance possible uses and select an appropriate institutional approach to plan implementation.

A shared vision of future possibilities is equally vital for the success and sustainability of the Kingston Harbour program. Once agreed upon, the vision will greatly enhance potential for smoothly orchestrating the cleanup actions. It

¹⁹ UNDP/GEF Planning and Management of Heavily Contaminated Bays and Coastal Areas in the Wider Caribbean Regional Study

will also encourage the public and private sector developments that will both contribute to and profit from the cleanup investment.

A cleaned up harbour makes possible the realization of a vision of Kingston Harbour that is thriving environmentally, socially and economically. By achieving or supporting achievement of the elements suggested in Table 3.1 following, a cleaned up harbour and revitalized waterfront can be a driving force behind raising living standards for all.

This section provides a preview of a future deliverable, addressing land use and zoning. It begins with a review of plans currently being put forward by major stakeholders and prospective developers. It then sets out a compilation of past activities that could be revived and enhanced. It moves on to offer some new ideas and options for major components to anchor the renaissance of the harbour and its entire waterfront.

Table 3.1 Optimal Outcomes of the Kingston Harbour Rehabilitation Project

<i>Environmental:</i>	<i>Social:</i>	<i>Economic</i>
- Clean water	- Greater equity in the use of resources	- Active and expanding port coexisting with other uses
- Healthy and more extensive mangroves and seagrass beds	- Better standard of living	- Intensified, efficient industrial uses
- Revival of fish stocks	- Expansion of prosperity inward from the waterfront	- Revived and well-managed fishing industry
- Steady stream of sediment to feed the Palisadoes	- More housing opportunities	- Self-sustaining/revenue-generating environmental services
- Reduced sediment into Sandy Gully and Hunts Bay	- More recreation opportunities	- Accessible parks, beaches, water sports, continuous waterfront pedestrian and bicycle path
- Healthier coral cover	- More and better jobs	- Cruise ship stopover and services
- A reduced and well-managed solid waste stream	- More available fish as an affordable food source	- High density housing and mixed use developments
		- Hotel and international conference destination (long-term)
- Clean beaches	- Improved health	- Reduced harbour maintenance costs

3.2. The Existing Plans and Ideas for Development

Based on the status of current plans, the “Givens” for future Kingston Harbour development include:

- Expansion of the Port;²⁰
- Expansion of the Airport;²¹

²⁰ Port Authority

²¹ Airports Authority of Jamaica

- Improvement of Downtown Kingston and Waterfront Park, including a multi-modal ferry and transportation terminal and extension of the coast highway to connect with Highway 2000;²² and
- Restoration of portions of Port Royal.²³

3.2.1. Expansion of the Port

Proposed improvements to meet the demands of more and larger container vessels include:

1. KCT 4 Project (2004-2005)
 - To be completed by First Quarter 2005, this project will increase KCT capacity by 300,000 TEUs;
 - Extend the South (Gordon Cay) Terminal berth by 91m and 7.7ha of container yard space;
 - Construct 502m of new berths at North Terminal and 5.2ha of new container yard space;
 - Other improvements at KCT 1 to upgrade efficiency.
2. KCT 5 Project (2007-2008)
 - Increases the KCT capacity by 500,000 TEUs to an estimated 2,000,000 TEUs;
 - Construction of approximately 450m of new berths connecting the North berth to the South berth;
 - Construction of 66.4ha of container yard space (+ 4 super post-Panamax cranes).
3. Beyond 2010

Several alternative locations have been examined for their capacity to accommodate proposed improvements to meet longer-term container shipping requirements. The requirements include:

- Channel depth of approximately 15 metres from Port Royal Point to container terminal;
A sufficiently wide turning area for vessels larger than 9,000 TEUs; and a highly productive container terminal capable of 50 container moves per hour per crane.

Figure 3.1 following shows, in plan and oblique views, the preferred alternative.

²² UDC

²³ PRDCL/UDC

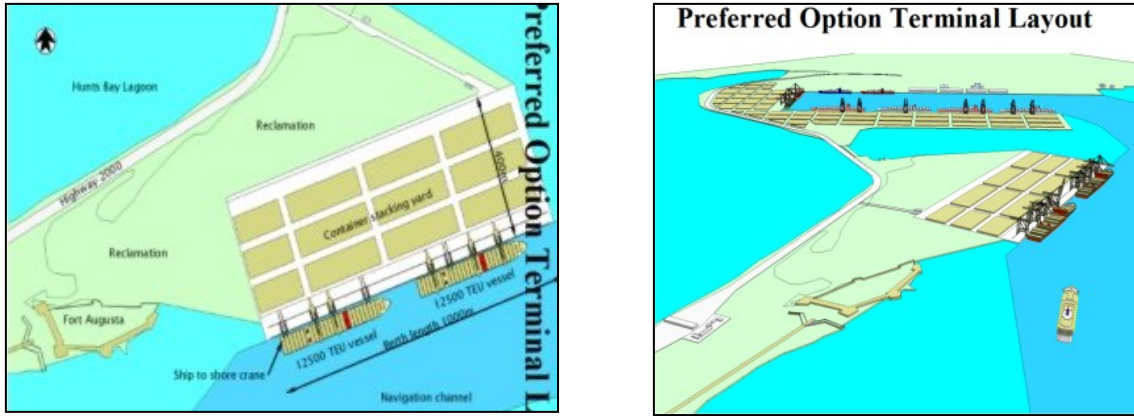


Figure 3.1 Preferred Port Terminal Expansion: North Option 1b

This alternative was selected from among those shown in Figure 3.2, following, with regard to the following constraints and opportunities:

Constraints:

- Highway 2000 corridor;
- Fort Augusta heritage conservation;
- WIHCON Marina;
- Hunts Bay storm water flow/dischARGE;
- NMLA runway approach and take-off corridor;
- Predetermined wind direction;
- Deeper water, more expensive reclamation, increased wave action south of Fort Augusta.

Opportunities:

- Shallow water at Fort Augusta for land reclamation;
- Deep water for large vessel turning in at least two areas.

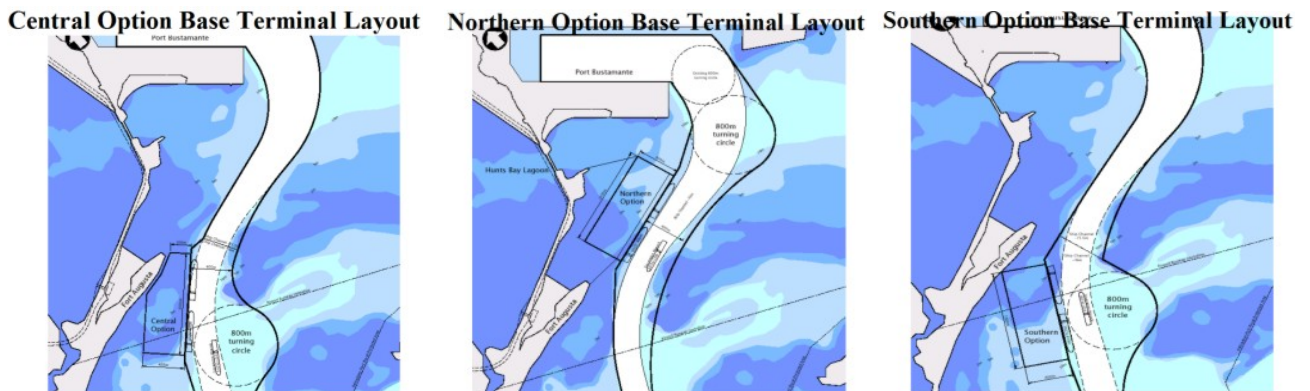


Figure 3.2 Options for Base Terminals

3.2.2. Airport Expansion

The Norman Manley International Airport has produced a Master Plan for expansion and improvement to:

- Meet the demands of projected growth in traffic (from 1.5m passengers in 2002 to 2.8m by 2050) and aircraft movement;
- Accommodate new and advanced aircraft designs; and
- Meet International Civil Aviation Organization (ICAO) standards for Runway End Safety Areas (RESA) which are not currently provided.

To meet the new RESA standard, the runway and parallel taxiway will need to be extended further into Kingston Harbour by 400m (60m landing strip extension for larger jets + 90m RESA at each end) (at a cost of US\$214.0M).

3.2.3. Downtown Improvement

The Urban Development Corporation (UDC) is preparing a new plan for the downtown waterfront with connections to Sir William Grant Park and the Market District. The plan also includes a multi-modal Transportation Hub, including a cruise ship pier and an arcade connection between commercial blocks.

The plan builds on the framework begun with the Shankland Cox Waterfront Plan (1960s) and continued with the Marvin Goodman Plan (1988) and the Vision 2020 Redevelopment Strategy (1994). Shankland Cox proposed offices, apartments, a cruise ship pier, a marina, a number of hotels and a cultural center and concert hall. The cultural center became the Conference Center. The cruise ship pier and marina have not yet materialized, while the proposal for hotels, in line with international experience, proved premature.

3.2.4. Restoration of Portions of Port Royal

Figure 3.3 shows the current plan (2001) for the redevelopment of Port Royal.²⁴

The plan addresses distinct zones or themes and proposes: excavation of Chocolata Hole Bay; cruise ship pier construction at the entrance to Chocolata Hole Bay; installation of a zone of “seamless retail” businesses around Chocolata Hole Bay, adjacent to the cruise ship pier; use of the Naval Hospital as a museum and construction of an Afro-Jamaican Pavilion to the northeast of the Naval Hospital; restoration of Admiralty House and surrounding structures;

²⁴ Prepared for the Port Royal Development Company (PRDCL) by Pragma, Marvin D. Goodman, The Jerde Partnership, (Architects), Thomas Consultants and others.

redevelopment of Fort Rocky for use as an entertainment venue; restoration of structures at the Naval Dockyard as tour center and naval museum; and improvement of the lagoon for eco-tours. The plan for phased development anticipates an average 10,000 visitors/day by 2025.



Figure 3.3 The PRDCL Port Royal Plan

3.2.5. Other Proposals

Other ideas currently being considered include improvement of the Newport East fish processing plant and fishing complex, a Piscinao²⁵ (big pool) at Gunboat Beach, as an interim use pending water quality restoration. Also proposed for 105 acres at Gunboat and Buccaneer beaches is a recreational, meeting and spa complex, to be known as 7th Harbour²⁶ (Figure 3.4).

This latter plan proposes: a Boat Tour Facility; Nature Park; 100 slip Marina and Marine Fuel Station; Restaurant; Boat Building and Repair Yard; Day Spa; 150-room hotel; Entertainment Complex with capacity for 15,000 patrons; and an IT Park and Warehouse Complex.

Further thought needs to be given to some aspects of the proposal, especially to the high percentage of the site devoted to parking, and the project's contribution to future cumulative traffic impacts on the Palisadoes.

²⁵ Recommended by Cowell Lyn, November 2003, based upon the Piscinao de Ramos, Rio de Janeiro

²⁶ Rivi Gardner and Allied Business Consultants



Figure 3.4 Proposed 7th Harbour Complex at Gunboat and Buccaneer Harbours

3.3. The Revival of Former Activities in Kingston Harbour

3.3.1. Beach and Water Recreation

Much has been written about the days when Kingston Harbour, with clean water and beaches, was a water sports playground. Activities included:

- Recreational and competitive swimming (Cross the Harbour Race) and water skiing (Figure 3.5);
- Boating, sailing and recreational fishing.

All these activities can return in the harbour's renaissance, together with newer sports such as windsurfing and kiteboarding, and provide healthy recreation, both free and through revenue and employment-generating businesses. The cleanup will also encourage snorkeling and diving around the Port Royal Cays and the wall (the southern boundary of the Palisadoes-Port Royal Protected

Area). However, areas suitable for all these uses will need to be clearly designated.

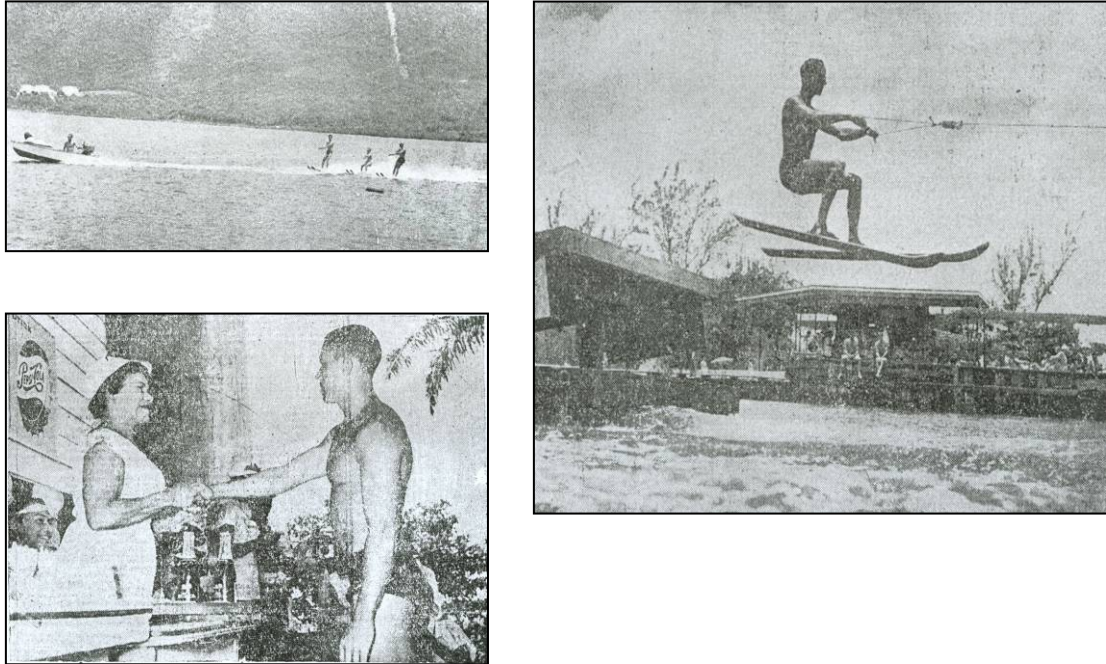


Figure 3.5 Water Skiing at near Weireka Hills, 1954 and Morgans Harbour, 1957; West Indies Aquatic Championships, Bournemouth Baths (Gleaner Photos)

3.3.2. Fisheries

As the earliest industry in and around the harbour, fishers have a huge stake in the cleanup effort. Many fishers are among the poorest, most marginalized of citizens.

The end of environmental degradation will promote recovery of the fisheries and the fishers' earning power.

*"The protection, preservation and sustainable development of the Kingston Harbour Fisheries is a non-negotiable and essential goal for the sustainable management and development of the Kingston Harbour."*²⁷

The fishing industry needs many improvements, including: designated fishing beaches and villages with tenure, modern fish markets, adequate data for sustainable fisheries management, and assurance of sustainable fishing practices.

²⁷ Andre Kong, Director, Fisheries Division, Ministry of Agriculture, 2003, and personal communication, 2004

Harbour rehabilitation and appropriate waterfront development is likely to result in a wider range of employment opportunities and a consequent reduction in fishing pressure. However, the necessary conservation and restoration of biodiversity is critical for the balanced, sustainable and widely profitable development of the Harbour. This means that not every idea for development of the Harbour can be accommodated in a collective vision that can be embraced by all the stakeholders, big business and fisherfolk alike. Refinement of the vision, a process begun with a workshop on May 6, 2005, needs to focus on ideas that expand the potential profitability of Harbour use through collaboration, rather than competition and conflict.

3.4. Thinking on a Larger Scale

The plan for Port Royal has already provided a taste of what is possible with imagination, faith and careful analysis. The plan's realization has been made more feasible by the strong interest in investment expressed by the cruise ship industry.²⁸ As indicated above, however, harbour cleanup would give the plans a boost.

At the same time, Port Royal needs to be placed in a wider context. The Master Plan identified destinations for cruise passengers, such as Spanish Town and the Blue Mountains, but did not address the excitement, aesthetic appeal and recreational options in a revitalized and redeveloped Kingston and Kingston Harbour.

The extensive areas of unused or underused land and obsolete facilities around the waterfront represent an extraordinary untapped resource and make it feasible to consider and select among a wide array of possible uses and developments. Nevertheless, Kingston and Kingston Harbour are relatively small in area and need to be used with great efficiency. Before reaching further decisions, it may be instructive to examine how other cities have used and recreated their waterfronts.

International experience shows that waterfronts can create good urban places and revitalize town centers. The fashion has shifted from grand economic development projects to mixed use schemes involving a high proportion of housing. The waterfront can become the backbone of sequenced regeneration, with key points along it developed like a string of pearls. Once developed, the regeneration will tend to spread into adjoining areas. The range of examples is broad, reflecting differences in culture, climate, physical configuration, stage in economic evolution, development pressure and local preferences.

²⁸ Robert Stephens, Port Authority, personal communication, 2004

A key objective is to enhance the sense of place established by Kingston. It will be a challenge to ensure that Kingston's waterfront becomes even more instantly recognizable in an age when many cities are becoming indistinguishable and "placeless." San Francisco's waterfront (Figure 3.6) exemplifies the sought-after memorable quality.



Figure 3.6 Images of the San Francisco Waterfront

(Clockwise from the top left: A marina and one of the historic piers; The Fisherman's Wharf Logo; A streetcar and harbour tour boat at Fisherman's Wharf; Marina Boulevard; Ghirardelli Square - adaptive reuse of a former chocolate factory for commercial office and recreational use; and Alcatraz the former Prison)

3.4.1. Waterfronts, Piers and Marinas

Cities whose original port facilities have become obsolete have taken a number of different approaches to their redevelopment.

1. Some cities, like Kingston (Figure 3.7), have removed the old piers and created a hard edge, with an ambiance somewhere between recognizably tropical (Bridgetown, Barbados, Figure 3.9) and strongly urban (Melbourne, Figure 3.8).

Others, such as Portland, Oregon (Figure 3.10) and some Toronto region cities (Figure 3.11) have opted for a softer edge and an extensive green park. The Rincon Park beneath San Francisco's Bay Bridge (Figure 3.12) will mix a hard edge and soft landscaping, as part of a long-standing effort to open up the waterfront to visual and physical access.



Figure 3.7 Kingston



Figure 3.8 Melbourne

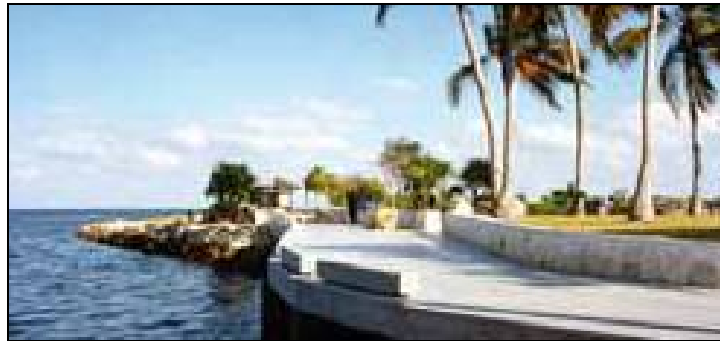


Figure 3.9 Bridgetown



Figure 3.10 Portland



Figure 3.11 Toronto



Figure 3.12 San Francisco Bay

2. Cities that have chosen to retain and rehabilitate piers for new uses include Amsterdam, London and San Francisco. They have taken very different approaches. The Amsterdam experience is described in Appendix I, Case IV, which shows how citizens of a small, densely-populated nation are building housing on piers.

London's extensive docklands have been transformed into a mix of housing developments and monumental office complexes. Figure 3.13 shows the redeveloped Gunwharf.

In San Francisco, after years of debate, the city chose to use the old piers for small offices, passive recreation (Figure 3.14), ferry landings and restaurants. In the early 1980s, a colony of harbour seals took over Pier 39, then being used by tour boats (Figure 3.15). The seals have been allowed to stay, adding significantly to tourism revenues.



Figure 3.13 London's Gunwharf
Redevelopment



Figure 3.14 San Francisco Fishing and
viewing pier



Figure 3.15 San Francisco's Pier 39

3. Some cities have incorporated marinas into the spaces between old piers. Examples again are found in San Francisco (Figure 3.6, top left and bottom left, Figure 3.16). In many once exclusively fishing harbours, pleasure boats and historic ships now share space with fishing boats. (Torquay (Figure 3.17), Penzance (Figure 3.18) and the village of Mevagissey (Figure 3.19) in the southwest of England are examples.



Figure 3.16 A San Francisco Marina



Figure 3.17 Torquay



Figure 3.18 Penzance



Figure 3.19 Mevagissey

4. An option for cities without ports or harbours is to construct pleasure piers (Clacton on England’s east coast, Figure 3.20, is one of many UK examples) or tour boat and marina piers (St. Louis on the Mississippi, Figure 3.21).

Both features extend usable and/or developable space and provide a different way of enjoying the water without significantly altering the beach or waterfront.



Figure 3.20 Clacton, England



Figure 3.21 St. Louis, USA

3.4.2. Waterfront Pedestrian and Bicycle Paths

Several cities have achieved, or are developing waterfront trails. The city of New York has found that the Hudson Riverfront bicycle path has been a significant catalyst for waterfront investment and development. The San Francisco Bay Trail (Figure 3.22) shows that continuity can be achieved even when portions of the waterfront are occupied by industry, ports and airports. The Toronto Trail (Figure 3.8) shows how variety of scenery and experience enhances the user's experience. Southern California examples (Figure 3.24) demonstrate how even in hard edged developed settings, waterfront paths and promenades can be places of fun and celebration.

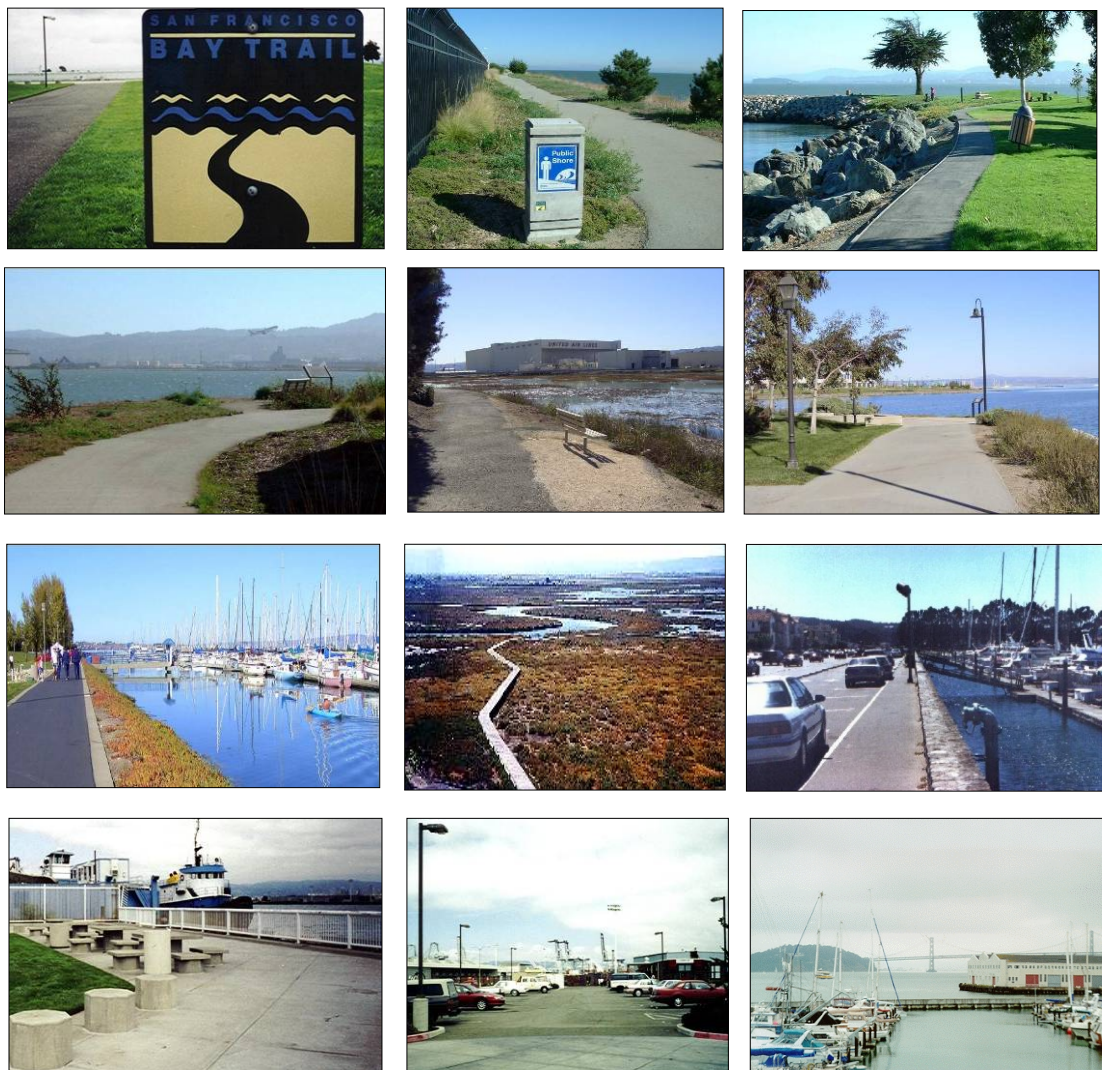


Figure 3.22 The San Francisco Bay Trail



Figure 3.23 The Toronto Trail

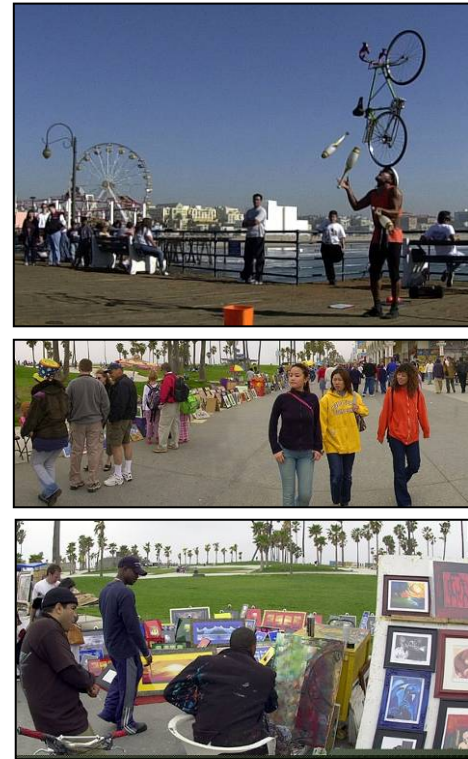


Figure 3.24 Southern California Paths

3.4.3. Signature Projects

Many cities have identified existing features or new developments as signature projects to help catalyze waterfront and waterfront-related redevelopment. Notable examples of reuse include Ghirardelli Square and Alcatraz in San Francisco (Figure 3.6 center and right). Notable examples of new construction include the Baltimore Aquarium and the Sydney Opera House.

3.4.4. Effective Use of Scarce Waterfront Space

Japan, like The Netherlands, is a small country that has learned to use space efficiently and imaginatively. The following projects are excellent examples of making multiple usage of small spaces and incorporating green into waterfront developments. The first, in Fukuoka, is an award-winning office, civic and cultural complex (Box 1) and the second is a multi-modal, multi-use transportation terminal in Yokohama (Box 2).

Amsterdam has also produced a multi-modal transportation center plan for Schiphol Airport and the area around the future high-speed train station. The plan creates enough space over the railway and highway for construction of 7 million square feet of offices, 1,500 dwellings, retail space, hotels, museums and a new park. The reorganization of transit areas and transport routes is a national planning priority that aims to combine different transport functions and discourage the use of cars.

BOX 1 ACROS BUILDING, FUKUOKA, JAPAN

Sited on the last piece of green space in the city center, architect Emilio Ambasz's approach of terracing the south facade as an extension of the adjacent existing park, while continuing the street wall on the north, is an attempt to balance the two, often incompatible ideas. In a country where land is a precious commodity the ACROS Building acts as both building and park, giving back what it takes from the land. In that simple gesture it redefines what an urban park can be.

Completed in 1995 the building is a success in its native land, its terraced south facade utilized by many in the area for exercise and rest, affording views of the city and the harbor beyond. Unfortunately it has received little press overseas, especially in the United States, a country without Japan's starvation for usable land.

This building, both on the inside and the outside, is an architectural masterpiece. On the outside, facing Chuo Park, is a step garden, planted on the entire side of a building. The lobby area inside creates an illusion of open space from the uppermost floors down to the two basement floors, making it seem as if there is more space inside the building than the structure would suggest from the outside. Windows and skylights give an added feel of airiness. Within ACROS, there are restaurants, shops, Fukuoka Symphony Hall, other exhibition halls, lecture rooms, and several government establishments.



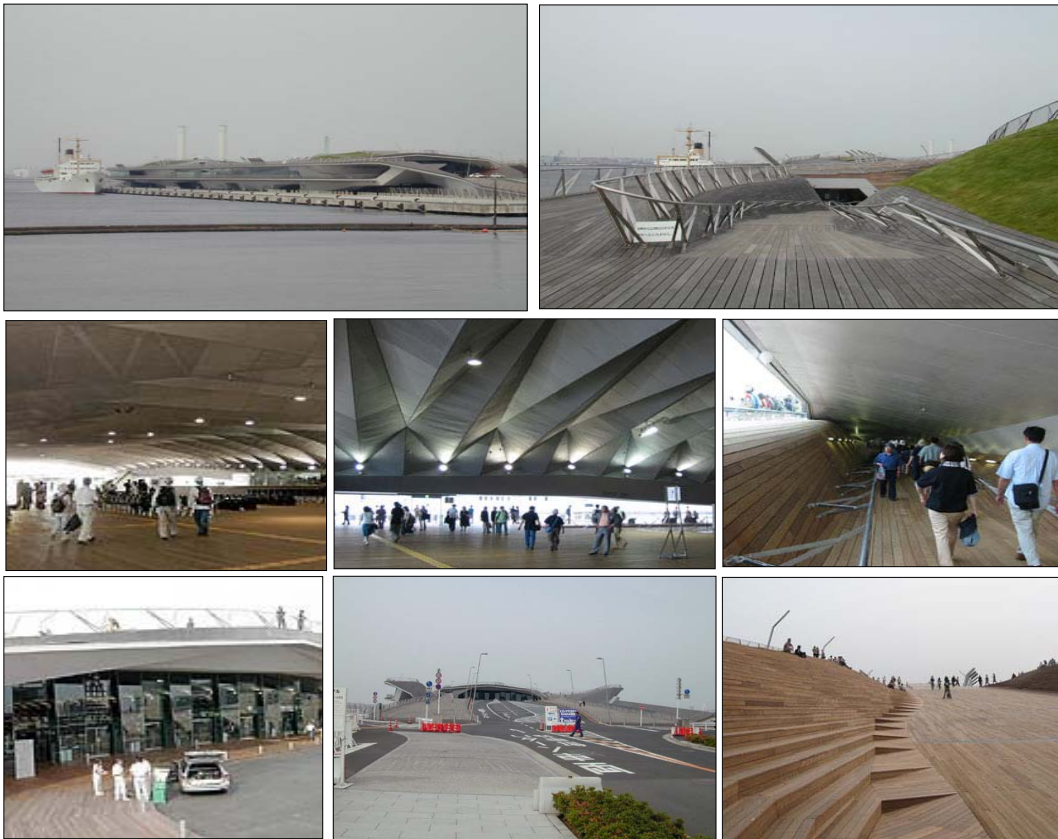
BOX 2 YOKOHAMA FERRY TERMINAL

Well timed with the opening of the World Cup soccer games in South Korea and Japan, the new Osanbashi International Passenger Terminal of Yokohama opened in June 2002. With its landscape-like curving roof, the building is intended as an extension of a nearby municipal park.

Yokohama is Japan's second largest city. In the 1980s Yokohama, which is traditionally a port town and entry gate for foreigners, began to transform as a harbor city. Dockyards and heavy industries moved out of the city center, and the waterfront to the north developed into a new business and entertainment district.

In 1994 the City of Yokohama held an international design competition and selected *Foreign Office Architects* (Farshid Moussavi and Alejandro Zaera-Polo). Hired in the middle of Japan's economic slump, the architects faced several difficulties and a near cancellation of the project. A turning point came when the International Federation of Football Associations (FIFA) decided to hold the 2002 World Cup games in Japan and South Korea, with Yokohama to host the final game. This scattered any remaining doubts and boosted the project.

The 230- by 1400-foot (70- by 430-meter) terminal is positioned orthogonal to the Yokohama waterfront and Yamashita Park. Yet the architects wanted to depart from the norm of a linear pier. Zaera-Polo explains: "We wanted to make a pier where you can walk in on a certain path and walk out on a different path. We developed this looped diagram, in which we were chaining all the parts of the program. Then we assigned to every line of the diagram a surface. We were interested in playing with the ground." The upper level is, therefore, a park-like roof for strolling and enjoying the scenery. The main level, below, houses arrival and departure facilities with meeting and waiting areas, restaurants, and shops. One level underground serves as a parking and machinery space. The building has a maximum height of 50 feet (15 meters).



Mahoko Hoffman

3.5. *The Possible New Big Ideas*

Kingston already has at least one signature structure on which to build -- its world-class conference center. The historic core of Kingston is being sensitively rehabilitated, and through UDC's current plans key features will be tied more evidently to the waterfront. The restoration of Harbour Street and the Breezy Castle Park have made important contributions to the future texture of the waterfront and adjacent areas. The following is a list of opportunities to add to the existing features and enhance current plans.

3.5.1. The Harbour Trail

A continuous Round the Harbour walking, jogging and cycling trail, using a Port Royal-Portmore ferry connection can become a reality, as the examples in Section 1.1.1 demonstrated.

3.5.2. The Transportation Terminal and Market

The UDC is planning a transportation hub for ferries (connecting Port Royal, NMIA, Portmore, Port Henderson, downtown Kingston, etc.), cruise ships, railway and bus transportation. The waterfront space left by the proposed east-west coast road is very limited and the land potentially occupied by the proposed Transportation Hub could be reserved for other critical uses. A facility drawing ideas from both the Yokohama terminal, the Fukuoka building and the Zuidas terminal, could extend into the harbour, bridge the coast road and incorporate residential, office and commercial uses over the hub.

Kingston needs to identify and review these choices before deciding on the exact form and location of a cruise ship pier and transportation terminal.

3.5.3. Grand Waterfront and Theme Parks

The cleaned-up Kingston Harbour needs significant beachfront parks, in addition to the proposed facility at Buccaneer Beach.

Harbour Head Park. Harbour Head was the terminus for PanAm clippers and thus has a history of recreation and tourist use, which is only dimly evident along the shoreline that houses a marina and dry dock. The water quality and flushing action at the eastern end of the harbour are particularly low. It may be feasible to add fill to the shoreline to create a large waterfront park reminiscent of some of the great urban waterfront parks, such as Grant Park on Chicago's

Lake Michigan shore. The new waterfront could incorporate a marina, a larger dry dock and possibly a fishing village.

“The best waterfronts open up access to the water for ordinary folks, not just paying restaurant patrons or hotel guests. They have at their hearts large, signature open spaces where people can play games, stroll, or bring a picnic and a towel and spend long Sunday afternoons -- as they do in Chicago, where 3200 acres of public park along Lake Michigan draw people from even the suburbs.”²⁹

Fort Augusta to Port Henderson Beachfront Park. At the other end of the harbour, there is a fine opportunity for creation of an improved beach. With construction of a new women’s prison, Fort Augusta could be rehabilitated for any of a number of new uses, as well as historical interpretation. Together with further restoration and reuse of historic structures at and near Rodney’s Arms, the area would have many stories around which to plan tours. This plan would also include a fishing village and fish market for Portmore, and restoration or creation of wetlands for a wetlands mitigation bank.

3.5.4. Adaptive Reuse and Mixed Use Redevelopment of the General Penitentiary

Construction of a new prison has been discussed for many years. Based on the success of projects such as Ghirardelli Square and Alcatraz, mentioned earlier, the General Penitentiary building could be used as the framework for a major mixed use development. Perhaps using a style echoing that of the existing historic brick structure, such a project could be terraced from multi-story apartments in the rear, stepping down with gardens, stores and outdoor restaurants, and bridging over the coast road to connect with the waterfront.

3.5.5. Improved Fishing Village and Fish Markets

The cleaned-up harbour needs well-planned fishing villages with fish processing, attractive fish markets serving Portmore and downtown Kingston, and fish restaurants catering to both residents and tourists.

²⁹ Yvonne Abraham, “With the South Boston Seaport, the city could open up a spectacular new public waterfront. Unless developers succeed in walling it off.”

3.5.6. The Long-term Outcome

The combination of currently planned projects and some or all of these new ideas will stimulate redevelopment of existing areas and eventually will support hotel construction and expanded conference business.³⁰

3.6. Financial Benefits

While the cleanup will support expanded shipping, port fees will not be imposed to support cost recovery. However, the many other activities and development opportunities facilitated by the cleanup, some of which are summarized in Table 3.2, will generate significantly expanded employment, income and public revenues.

Based on the extensive available experience with successful harbour cleanups and waterfront redevelopment programs, land values are likely to rise significantly. Higher land values will challenge the preservation of open areas, visual and physical access to the harbour and affordable housing availability (see Appendix I, Case V) and require carefully crafted zoning and inclusionary housing requirements.

Table 3.2 Revenue Sources and Implementation Actions

<i>Possible Sources of Revenue</i>	<i>Investment Opportunities/ Sources of Employment, Profit & Financial Sustainability</i>	<i>Incremental Implementation Actions</i>
Sewage fees	Return to/expansion of former uses	Consultation <i>re</i> fishing village locations
Multilateral funds	Fisheries	KSA Sustainable Development Plan
Debt for Nature	Fishing Villages	Ship-generated waste facility
KH Trust Funds	Port Royal Redevelopment	Industrial cleanup
Private Investors	Ship-generated Waste Facility	Attraction of additional shipping
	Cruise Ship	Wetlands bank (preservation & creation)
	Major Dry Dock	Mangrove replanting
	Beaches and Swimming Pools	Soapberry tertiary STP
	Cays and Corals	New Prison construction
	Harbour Tours	Adaptive Reuse of General Penitentiary
	Historic Sites	Ft. Augusta historic preservation / museum
	Regional Tourism	Ferry Terminal

³⁰ Nicholas Falk, *op. cit.*

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Airport Expansion	Pedestrian and bicycle trail
Mixed-use Development	Park at Harbour Head
Culture and Entertainment	Beach Park at Port Henderson
Waterfront Housing	Green Gullies
Hotels, Conferences, Cultural Events	Possible reconstruction of Myrtle Bank

4. The Legal Regime

4.1. Historical Background

Legislation relating to Kingston Harbour has traditionally been shaped by and limited to the context of shipping. This fact has left its pronounced imprint on existing legislation and in particular, older legislation of pre-environment awareness vintage.

The legislative challenge concerning Kingston Harbour emerged early in the 18th century, as the port of Kingston took over from Port Royal as Jamaica's main seaport, following the latter's devastation in the great earthquake of 1692 and fire of 1703. Increased naval traffic began to necessitate more systematic regulation of the harbour and in 1744 legislation set a new scale of harbour dues and established a Harbour Trust to make regulations for the control of all vessels using the harbour. To ensure observation of the regulations, the legislation also required appointment of a water-bailiff or harbour master, whose salary was to be met from the dues.

The first set of trustees consisted of a Councilor, three Assemblymen (the then "members of parliament" for Kingston) and five private citizens. In 1760, the Trust was replaced by a Board of Commissioners comprising seven Assemblymen and six private citizens who were empowered to frame harbour regulations and generally direct the water-bailiff in his duties. The legislation providing for this change also stipulated that the water-bailiff was now to be appointed by the Governor (of the then colony of Jamaica).

By 1769, membership of the Board consisted of the Speaker of the House and at least ten other Assemblymen but only three private citizens, as the hold of the Assembly on the Board increased. However, as the Speaker and Assemblymen were too busy with other duties to spare time for harbour affairs, eventually in 1775, the Assembly withdrew from all participation and vested control of Kingston Harbour in the Justices and Vestry of the parish of Kingston.³¹ Nearly a century later saw the enactment of **The Harbours Act, 1874** which remains in force in Jamaica, with limited amendments made to it over the years.

³¹ Spurdle, Frederick G.: *Early West Indian Government*, New Zealand, p. 143; Kingston Harbour Acts of 1744, 1760, 1769, 1775, 1778 & 1783.

4.2.Existing Legislation

4.2.1. The Harbours Act, 1874

The Harbours Act, 1874 governs certain shipping-related activities and facilities in areas declared to be harbours under the Act and provides for the oversight of such activities and facilities by the Harbour Master, who is appointed as such by the Governor-General. However, he is also an employee of the Port Authority of Jamaica *qua* Director of Ports and Shipping Services. The Port Authority remunerates him, houses his office and facilitates his work.

Under the Act,³² the Harbour of Kingston is defined as including:-

“all the body of water between the shores in the parishes of Kingston, St. Andrew, Saint Catherine, to the northward of the Palisadoes, from Harbour Head to Port Royal, and of a straight line from the westernmost point of the land at Fort Charles, in Port Royal, to the southernmost point of the Twelve Apostles Battery.”

The Act³³ stipulates that:-

“The Authority may make rules for the regulation and control of any harbour in the Island and of the channels and approaches leading thereto and of persons, boats and vessels using any such harbour or approaches, and for all purposes connected with any such matters.”

Such rules may, *inter alia*, “prescribe penalties, not exceeding two hundred dollars, for the breach of any rule.” With such maximum penalties, such rules would hardly be worth making.

The Act does not define “the Authority”. This needs to be done. However, reference in the Act to “the Authority” is understood to be a reference to the Maritime Authority.³⁴

Under the Act, the duties of the Harbour Master, as regards Kingston Harbour, is largely limited to or centered on facilitation of ship navigation and mooring in the harbour. Navigational aids such as buoys are required to be in order and impediments to navigation such as wrecks are required to be removed.

Disputes concerning how the Harbour Master performs his duties or directions he gives are generally required to be referred for determination to “the Authority” (Maritime Authority), which is also empowered to remove wrecks or vessels which are impediments to navigation in the harbour.

³² per Section 4.

³³ per Section 7(1).

³⁴ See: **The Shipping Act, 1998 (Act 8 of 1998), Section 464**, pursuant to which, in 1999, the Maritime Authority succeeded the then made defunct Marine Board, as such “Authority” under **The Harbours Act, 1874**.

The Act does not contemplate management or oversight of the harbour as a vital but vulnerable natural resource susceptible to pollution or other deleterious effects which can undermine its utility and value. Environmental management concerns are only addressed in a limited, incidental and ineffectual way by largely anachronistic provisions.

Provision is made under the Act for “the Secretary of the Authority” to sue the owner of a vessel or wreck to recover expenses incurred in having it removed from the harbour where it is an impediment to navigation.

The Act stipulates³⁵ that where a person willfully sinks a vessel in a harbour without written permission from “the Authority”, such person is liable to a penalty not exceeding two hundred dollars (\$200.00). In addition to such penalty, the person is liable to pay all expenses incurred by the Harbour Master in removing the vessel.

A court may order the person to pay, in addition to the penalty, the amount of the damage caused by the sinking or be liable to imprisonment for non-payment of the penalty and/or the amount of the damage. However, where the court makes such an order, this operates as a bar to any further proceedings on the part of the public in respect of such damage. Consideration needs to be given as to the advisability of such a bar.

The Act stipulates³⁶ that if a person throws or deposits oil in the harbour (except in an area set apart for that purpose), he is liable to a fine not exceeding two thousand dollars (\$2,000.00). Part of Little Pedro Point Harbour is so set apart for the purpose of throwing or depositing rubbish, earth, mud, stone, sand, ballast or other similar matter.³⁷

Under the Act,³⁸ a person who digs up or carries away stones or sand from any reef or breakwater by which the harbour is protected (or from certain reefs or shoals near Port Royal) is liable to a penalty not exceeding sixty dollars (\$60.00).

4.2.2. The Harbour Lights and Lighthouses Act, 1900

The Harbour Lights and Lighthouses Act, 1900 vests ownership of all lighthouses and harbour lights in the Commissioner of Lands and their care and management in the Harbour Master with the Port Authority empowered to construct them.

³⁵ per Section 18.

³⁶ per Section 19.

³⁷ The Harbours (Little Pedro Point) (Control of Deposits) Rules, 1953, Rule 2.

³⁸ per Sections 20-22.

4.2.3. The Harbour Fees Act, 1927

The Harbour Fees Act, 1927 provides³⁹ for the payment of a prescribed harbour fee by a vessel entering Kingston Harbour. Fees collected are required to be paid to the Port Authority.

The Harbour Fee Order, 1978 made under the Act, stipulates different harbour fee rates for different categories of ships, with ships categorized primarily in terms of what they carry (cruise passengers, containers, petroleum, gypsum, bauxite and alumina).

Adjustment of fee rates should be considered to take into account risk of pollution or damage to the harbour's environment based on what the ships carry.

4.2.4. The Port Authority Act, 1972

The Port Authority Act, 1972 established the Port Authority as a statutory corporation with mandate⁴⁰ to regulate the use of all port facilities in Kingston Harbour and provide, operate, maintain and improve such port facilities.

Under the Act,⁴¹ "port facilities" means:-

"facilities for the drydocking, berthing, towing mooring or moving of vessels in or entering or leaving a port or its approaches, for the loading and unloading of goods or embarking or disembarking of passengers in or from any such vessel, for the lighterage or the sorting, weighing, warehousing or handling of goods, and for the carriage of passengers or goods in connection with any such facilities."

However, the harbour of Kingston is not defined under the Act or Regulations made thereunder. The mandate of the Port Authority under the Act is, in essence, limited to a focus on "port facilities" in Kingston Harbour and not on Kingston Harbour *per se*.

4.2.5. The Beach Control Act, 1956

This Act, which is administered by NEPA (NRCA) regulates the use and development of the foreshore and floor of the sea under a licensing system which

³⁹ per Section 3.

⁴⁰ per Section 6. (Under The Jamaica Export Free Zones Act, 1982, Section 6, The Port Authority also has responsibility to administer, control, operate and manage the Kingston Export Free Zone, in the harbour precincts, (and other Free Zones) and is empowered to undertake various constructions and developments incident to carrying out such responsibility).

⁴¹ per Section 2.

emphasizes safeguarding the public interest as regards fishing, bathing, recreation and the protection of the environment.⁴²

Before NEPA (NRCA) can issue a license, where application for such is made to it for use of the foreshore or floor of the sea, which involves the erection in a harbour of encroachments, NEPA has to obtain from the Port Authority certification that the encroachment is not likely to have an adverse impact on vessel traffic or other activities related to the harbour. NEPA must also ensure that the plans or other documents relating to the structure of the encroachment meet the satisfaction of the Port Authority.⁴³

Rights in and over the harbour (including the harbour floor, the water column super-adjacent thereto and the natural resources therein and the foreshore) are vested in the Crown.⁴⁴

With a recent far reaching amendment to the Act, NEPA (NRCA) is empowered under the Act to seek various court orders to protect the foreshore or floor of the sea (and accordingly Kingston Harbour) with the super-adjacent water column and natural resources therein. In the case of damage to a natural resource, NEPA may obtain against the person who caused the damage, an award for compensation which takes into account any reasonably foreseeable loss in the economic value of the natural resource to the public, including:-

- (a) *“Income from sales of goods and services provided by marine resources;*
- (b) *The value of marine resources used for subsistence;*
- (c) *The value of ecological functions and services provided by marine resources;*
- (d) *The value of potential uses of marine resources and biological assets; and*
- (e) *The value to the public derived from the existence of the resource, independent of the value of any existing or potential use of the resource.”*⁴⁵

This amendment considerably enhances and revolutionizes what may be claimed as compensation under Jamaican law where a natural resource is damaged and implicitly allows the recognition, in law, of the harbour as a vital natural resource of great economic and ecological value.

However, as pertains to the harbour, the award of such compensation is limited to circumstances, circumscribed by the Act and its focus, relating to where there is usage without or in breach of the requisite license, refusal to remove encroachment when notified to do so by NEPA, needed closure of a beach or

⁴² See: **Section 9**, *ibid.*

⁴³ See: **Section 11**.

⁴⁴ Subject to limited qualification and exception. (See: **Sections 3 & 2**.)

⁴⁵ See: **Section 19**.

other facility or where a person in breach of the Act causes damage to natural resources.

An owner or occupier of land adjoining a part of the foreshore is entitled to use that part for private domestic purposes (such as bathing, fishing and like forms of recreation) and as a means of access to the sea for such purposes.⁴⁶

Under the Act, a part of the foreshore and the floor of the sea with the super-adjacent water may be declared a protected area with a prohibition in the declared area against activities, such as for instance, fishing, the usage of particular boats, the disposal of rubbish or other matter therein, water-skiing, the dredging or disturbance in any way of the floor of the sea, the destruction or removal of coral, seafans and sedentary marine animals and the searching for or removal of any treasure or artifact from the floor of the sea.⁴⁷ Such a declaration was made in respect of the Port Royal area in 1967 by **The Beach Control (Protected Area) (Port Royal) Order, 1967**.

4.2.6. The Natural Resources Conservation Authority Act, 1991

The Natural Resources Conservation Authority Act, 1991 established the Natural Resources Conservation Authority (NRCA), now subsumed under the National Environmental Planning Agency (NEPA), with responsibility⁴⁸ for the effective management of the physical environment of Jamaica (including Kingston Harbour) so as to ensure the conservation, protection and proper use of Jamaica's natural resources. It is also mandated to manage marine parks and protected areas prescribed under the Act.

In carrying out its functions NEPA (NRCA) may:-⁴⁹

- (a) *develop, implement and monitor plans and programmes relating to the management of the environment and the conservation and protection of natural resources;*
- (c) *in relation to prescribed national parks, marine parks, protected areas and public recreational facilities -*
 - (i) *carry out or cause to be carried out such improvements as it thinks fit; and*
 - (ii) *provide for the zoning thereof for specified purposes and for the licensing of persons carrying on any trade or business therein;*

⁴⁶ See: **Section 4**.

⁴⁷ See: **Section 7(1)**.

⁴⁸ per **Section 4(1)**.

⁴⁹ per **Section 4(2)**.

- (d) *formulate standards and codes of practice to be observed for the improvement and maintenance of the quality of the environment generally, including the release of substances into the environment in connection with any works, activity or undertaking; [and]*
- (e) *investigate the effect on the environment of any activity that causes or might cause pollution or that involves or might involve waste management or disposal, and take such action as it thinks appropriate.”*

As regards the issue of overlapping jurisdiction between NEPA (NRCA) and another entity on a matter, the Act requires the entity to consult with NEPA before determining the matter concerned.⁵⁰

Under the Act, a permit is required from NEPA for any port and harbour development,⁵¹ with a licence being required for discharge of sewage, trade, any poisonous, noxious or polluting matter, effluent or for construction or modification of any works for such discharge in the harbour.⁵² With limited exception, such discharge without a license is an offence.

Special shelter from liability is provided under the Act for the National Water Commission, through whose sewage services and infrastructure much of the pollution of Kingston Harbour takes place.⁵³

As regards pollution of the harbour by agricultural run-off, NEPA (NRCA) may, where the pollution is as a result of unsatisfactory agricultural practice, have the occupier of the land take the necessary steps to address the problem.⁵⁴

NEPA (NRCA) is empowered under the Act to institute measures to prevent poisonous, noxious or polluting substances from entering Kingston Harbour as well as to remedy any pollution that occurs and recover the costs therefore.⁵⁵

It may also require the owner or operator of any sewage treatment plant, industrial waste treatment facility or any facility for the disposal of solid waste or for the abatement of air pollution or any other facility for controlling pollution, to submit to it, information relating to the performance of the facility, the quantity and condition of effluent discharged, and the area affected by the discharge of effluents.⁵⁶

⁵⁰ per Section 8.

⁵¹ See: Section 9 & The Natural Resources (Prescribed Areas) (Prohibition of Categories of Enterprise, Construction and Development) Order, 1996.

⁵² See: Section 12(1).

⁵³ See: Section 14, *ibid.*

⁵⁴ See: Section 15(1).

⁵⁵ See: Section 16.

⁵⁶ See: Section 17(1).

Where an activity of an undertaking poses a serious threat to a natural resource, NEPA may issue an “enforcement notice” requiring cessation of the activity and amelioration of the activity to restore the natural resource to its condition before the activity took place.⁵⁷

NEPA is entitled, under the Act, to recover the costs and expenses incurred in the restoration, amelioration or replacement of any natural resource damaged or destroyed by an offending activity.⁵⁸

Ships, aircraft or other items used to commit an offence against the Act are subject to seizure and detention or forfeiture, upon application to the court by NEPA.⁵⁹

NEPA may also seek to have the Minister make an Order for the institution of measures for preventing or mitigating, as far as possible, the destruction or degradation of a natural resource threatened with destruction or degradation.⁶⁰

Recommendation may also be made by NEPA to the Minister for an area to be declared an environmental protection area with special conditions attached to its usage. Such declaration facilitates application of an environmental plan for the area.

The Minister may designate an area to be a “protected area” or “marine park”. Designation is on the recommendation of NEPA after consultation with the Jamaica National Heritage Trust.

The Act provides for designation of:-

- “(b) any area of land or water as a protected area in which may be preserved any object (whether animate or inanimate) or unusual combination of elements of the natural environment that is of aesthetic, educational, historical or scientific interest; or*
- (c) any area of land lying under tidal water and adjacent to such land or any area of water as a marine park.”*

Pursuant to **The Natural Resources (Palisadoes – Port Royal Protected Area) Order, 1998**, the Palisadoes – Port Royal area has been declared a protected area. However, no area within the harbour or its precincts has been designated a marine park.

Marine parks are governed by **The Natural Resources Conservation (Marine Parks) Regulations, 1992**, made under the Act. They are subject to the

⁵⁷ See: Section 18.

⁵⁸ per Section 19.

⁵⁹ See: Section 64, *ibid.*

⁶⁰ See: Section 32.

jurisdiction of NEPA which appoints the required Advisory Board for a marine park.⁶¹

The function of the Board is to make recommendations to NEPA on the preservation of the ecological system in the marine park.⁶²

The Regulations require that the Board comprise the manager of the marine park, chairman of NEPA (NRCA) or his nominee, a representative from the fisheries division of the Ministry of Agriculture, the Director of the Discovery Bay Marine Laboratory, a person qualified in marine biology and three other persons.⁶³

Such a Board composition patently does not reflect the breadth of focus required for the management of Kingston Harbour.

The Regulations prohibit absolutely the discharge or deposit in the waters of a marine park any refuse, waste or polluting substance of any kind injurious to plant or animal life.⁶⁴ Such absolute prohibition conflicts with the earlier mentioned special shelter from liability under the Act, afforded the NWC re the discharge of sewage.

Interference with any mooring or buoy in a marine park is prohibited.⁶⁵ Under the Regulations, the anchoring, berthing or abandonment of a ship in a marine park is under the jurisdiction of NEPA.⁶⁶ However, as earlier indicated, under **The Harbours Act, 1874**, jurisdiction in such matters for the harbour reside with the Harbour Master and the Maritime Authority of Jamaica.

Overall, it is clear that the Regulations, do not contemplate designation as a marine park, for purposes of rehabilitation and management, an extensive contaminated area such as Kingston Harbour, with its particular wide-ranging set of actors and activities, especially where contamination is not primarily endogenous, but is as a result of what is taking place outside the area.

Accordingly, for these (and other extra-legal⁶⁷) reasons, a proposal⁶⁸ that Kingston Harbour should be declared a marine park towards its rehabilitation and management would appear to be misconceived.

The Natural Resources (Hazardous Waste) (Control of Transboundary Movement) Regulations, 2002, made under the Act restricts the movement of

⁶¹ See: **Regulation 27(1)**, *ibid.*

⁶² See: **Regulation 27(8)**, *ibid.*

⁶³ per **Regulation 27(2)**.

⁶⁴ per **Regulation 6**.

⁶⁵ per **Regulation 7(1)**.

⁶⁶ See: **Regulation 17(1)**.

⁶⁷ See: World Commission on Protected Areas Guidelines for Marine Protected Area, IUCN – The World Conservation Union & Cardiff University; Guidelines for Protected Area Management Categories, World Conservation Monitoring Centre & IUCN – The World Conservation Union; Policy for Jamaica's System of Protected Areas, Government of Jamaica.

⁶⁸ per Cowell Lyn, at Kingston Harbour Committee consultation, March 17, 2005.

hazardous waste to and from Jamaica, with permits from NEPA being generally required for such movement.

If a spill or release of hazardous waste occurs in port or during movement through the harbour, the person who has the management or control of the waste at the time of the spill or release is required to notify NEPA immediately and furnish NEPA with a report on the matter.

However, the Regulations do not apply to radioactive wastes which are subject to other international control systems, including international instruments, applying specifically to radioactive materials and wastes which derive from the normal operations of a ship, the discharge of which is covered by **The Shipping Act, 1998** or any international instrument in effect in relation to Jamaica.⁶⁹

Of major concern here is the threat to the harbour posed by the continued transit, in relatively nearby waters, of radioactive/nuclear materials, in respect of which transit, Jamaica needs to accelerate its efforts at regional and international for a, towards securing changes to applicable international rules, which allow for such transit.

4.2.7. The National Solid Waste Management Act, 2002

The National Solid Waste Management Act, 2002 established the National Solid Waste Management Authority (NSWMA) with responsibility⁷⁰ for the effective management of solid waste in Jamaica.

As regards another agency having overlapping jurisdiction on a matter, (as is the case with NEPA), the Act requires that such agency consults with the NWSMA before determination of such matter.

A license is required from the NSWMA in order to operate a solid waste disposal facility.⁷¹

The NSWMA may, after consultation with NEPA, require the owner or operator of a sewage treatment plant, industrial waste treatment facility or other solid waste disposal facility which generates sludge, to submit to it information regarding the performance of the operation, the solid waste handled and the quantity, quality and method of treatment and disposal of leachate and other waste.⁷²

⁶⁹ The Natural Resources (Hazardous Waste) (Control of Transboundary Movement) Regulations, 2002, Regulation 3.

⁷⁰ per **Section 4(2)**.

⁷¹ per **Section 23(1)**.

⁷² per **Section 58**.

This requirement overlaps with a provision under the Natural Resources Conservation Authority Act, 1991[1], referred to earlier, pursuant to which NEPA can require the very same information from the owner/operator as can the NSWMA.

4.2.8. The Public Health (Nuisance) Regulations, 1995

The discharge of any sewage, industrial waste or any other noxious matter into the sea or any watercourse or onto land is a nuisance prohibited under the Regulations.⁷³

The Regulations stipulate that no person is to cause or permit a nuisance on any premises owned or occupied by him or aid and abet another person to cause or permit a nuisance on any premises.⁷⁴

Notice to abate or take steps to prevent the recurrence of a nuisance may be given by a medical officer, public health inspector or the KSAC Council or Parish Council concerned, as the case may be.

Upon failure to comply with the notice, the KSAC Parish Council may have the premises entered and do whatever is necessary to abate or prevent a recurrence of the nuisance and may institute legal proceedings against the delinquent person for non-compliance with the notice.⁷⁵

The delinquent person is liable to pay the expenses incurred in abating or preventing a recurrence of the nuisance and upon conviction, for non-compliance with the notice a fine not exceeding fifty thousand dollars (\$50,000.00).

The overall scope, tenor, low level sanctions and enforcement mechanisms of the Regulations limit considerably their utility and relevance in addressing pollution of Kingston Harbour.

4.2.9. The National Water Commission Act, 1963

The National Water Commission (NWC) is established under the Act, which empowers it to impose sewage rates and require owners of premises to have their premises connected to any sewage system which it constructs, extends or operates.⁷⁶

⁷³ per First Schedule, paragraph 10.

⁷⁴ per Regulation 3.

⁷⁵ See Regulation 4, *ibid.*

⁷⁶ per Section 12.

4.2.10. The Shipping Act, 1998

This Act established the Maritime Authority and has various stipulations aimed at ensuring maritime (ship) safety which serve to minimize the risk of ship-source pollution to the marine environment.

Provisions of a number of international maritime safety conventions, to which Jamaica is a party, (listed later in this report) are incorporated in the Act.

Provisions of **The International Convention on Salvage, 1989**, to which Jamaica is not a party, are also incorporated in the Act. It provides for a salvor who traditionally works on a “no cure no pay” basis to be remunerated for contributing to the preservation of the marine environment, even where a vessel is not salvaged, thus providing the salvor with particular incentive to act to protect the marine environment in the event of a marine accident.⁷⁷

4.2.11. The Maritime Areas Act, 1996

This Act allows for action to be taken against a foreign vessel and its crew, where, for instance, the harbour is polluted as a result of a crime committed on board such vessel even where the polluting foreign vessel has not come into harbour nor even Jamaica’s archipelagic waters, but is traversing the territorial sea in purported exercise of its right of innocent passage.

4.2.12. Other Legislation

Other pieces of legislation concern the harbour. The most noteworthy of these relate to the pollution sources of the harbour. Consideration of pollution sources as discrete subject areas in their own right and applicable legislation is warranted, as this helps to identify the roles of various institutions as regards the pollution of the harbour.

Such consideration points to an urgent need to have in place an appropriate policy, institutional and legal framework regarding the pollution sources themselves, particularly the main one of untreated sewage, if the issue of pollution of the harbour is to be addressed adequately.

Pending legislation and relevant international treaties are presented in Appendix II.

⁷⁷ See: Section 367, *ibid*.

⁷⁹ See: **The Jamaican Constitution, Section 77(1)**.

5. The Current Institutional Framework

5.1. *Broad Governmental Setting*

At the broad formal macro-level of public sector governance in Jamaica, the institutional framework within which policy and management decisions are made and implemented in respect of Kingston Harbour is that of a ministerial system of government. It is circumscribed by **The Jamaican Constitution**, encompassing the Cabinet, Cabinet sub-committees, ministries, departments and agencies of government and formal ad hoc arrangements.

The Cabinet is responsible for setting national policy, with the portfolio Ministries concerned being responsible for particular subjects. The entailed work is carried out through the administrative organ of the Ministry, with portfolio/subject responsibility and departments, bodies and agencies operating thereunder with their particular sub-portfolios.⁷⁹

Within this formal institutional governance structure, governmental departments, agencies and bodies are defined, constrained and propelled by mandates normally underpinned and delineated by particular applicable legislation, with entities contending for scarce resources to address items on budgets ultimately dictated by such mandates.

This broad formal institutional setting co-exists with and appears to be at times affected (or infected) by informal or contra-formal features which are noteworthy, at least *en passant*, since they may influence the efficacy of any institutional arrangement adopted, adapted or reaffirmed for Kingston Harbour.

These features include the bypass of formal institutional arrangements and the over-reaching of legal mandates reflecting a disconnect between *de jure* and *de facto* responsibility. Such a situation obtains where expediency considerations result in an agency that has the funds but lacks the requisite legal mandate carries out particular functions of another less liquid or pecunious agency. It also obtains when a function is exercised by a non-mandated agency of a “trusted implementer” or “mover and shaker”.

There is at times a protracted time lag between agency practice and providing the requisite legal underpinning for the practice concerned. Further, there is the problem of the success or fate of particular institutional arrangements being overly-dependent on the level of interest and clout of particular incumbents. Accordingly, an institutional arrangement may fail to deliver the desired result simply because of insufficient interest or effort on the part of the particular incumbent Minister(s) with the portfolio responsibility. Otherwise, various myopic and other considerations of expediency and a timorous proclivity vis-à-

vis needed change underlie and have served to undermine or even determine institutional arrangements embarked upon.

The existing institutional framework for environment and sustainable development in Jamaica is essentially that of the "Authority Model", (delineated by Griffiths⁸⁰), whereby an institution such as NEPA (NRCA) -- an "Authority" has an over-arching legal mandate for environmental matters. However, at the Ministerial level, Jamaica also reflects the "Portfolio Allocation Model", whereby portfolio responsibility for environment is assigned to a Ministry. The environmental portfolio has appeared to be somewhat of an "appendage" to whichever usually well-established Ministry it has been moved to from time to time, thereby thinly veiling the seeming low priority the environmental portfolio⁸¹ has been accorded in its relatively brief and fledgling life-span.

The environment portfolio currently resides with the Ministry of Land and Environment which has Kingston Harbour as one of its sub-portfolio responsibilities, in relation to which it has been playing a lead role in policy development. However, other Ministries such as Health, with its Environmental Control Unit, Transport & Works, with portfolio responsibilities for agencies such as the Port Authority and the Maritime Authority of Jamaica as well as Local Government with jurisdiction over municipal/parish councils, also have important roles to play in the formulation of policy concerning the harbour and its rehabilitation.

Griffiths makes observations about Caribbean countries which would appear to apply generally to Jamaica:-

"The institutional administrative framework which exists often results in duplication of effort; institutional rigidity in the form of ineffective communication and the lack of cooperation between various departments; inadequate legislative mandates; the lack of a clear definition of environmental entities in development planning; and the explicit separation between those agencies responsible for managing the [economy] (ministries of finance and planning) and those involved in environmental planning, control and protection.

Generally, the institutional arrangements and capacities in these countries reflect the strengths and weaknesses of the legislative and regulatory framework for environmental management".⁸²

⁸⁰ Griffiths, Mark D.: Governmental Institutional Arrangements and Legislative Requirements for Sustainable Development in the Caribbean with special emphasis on Governmental Institutional Arrangement, Economic Policy & The Environment: The Caribbean Experience, Griffith, M & Persaud, B, Eds., C.E.D., UWI, Mona, 1995, p. 121 at p. 128.

⁸¹ See: Griffiths, *ibid*, p. 127.

⁸² *Ibid*, pp 129-130.

“In some instances, institutional rigidity and the seeming need on the part of both technocrats and politicians alike, to protect what is perceived to be their sphere of influence can have far reaching implications.”⁸³

For Griffiths, addressing these concerns requires, *inter alia*, top level support and commitment by policy makers, rationalization of existing institutional framework (as most of the relevant institutions “... were established based on narrow mandates and preoccupations and to a large extent work independent of other organizations”) and a strong legal basis.

“A strong legal basis is a sine qua non for any institutional framework for environmental and sustainable development. It is the legislative framework which to a large extent will give such an institutional entity its locus standi. The legal framework also identifies the parameters within which such an organization operates.”⁸⁴

5.2. Existing Institutions

5.2.1. Governmental Agencies with Harbour Responsibilities

There are many governmental agencies/entities with responsibilities in respect of Kingston Harbour and its pollution. The main agencies/entities are set out in Table 5.1.

Table 5.1 Relevant Agencies/Entities and their Harbour-related Responsibilities

<i>Government Agencies/Entities</i>	<i>Responsibilities/focus (re Harbour)</i>
Airports Authority of Jamaica	Norman Manley International Airport runway extension into harbour and sewage and solid waste facilities for the airport.
Coast Guard	Surveillance/security/law enforcement
Commissioner of Lands	Ownership
Commissioner of Mines/Ministry of Mining	Mining of sea sand/quarry material & other minerals (excluding petroleum)
Customs	Dangerous goods/ prohibited items

⁸³ Ibid, p. 131.

⁸⁴ Ibid, p. 137.

Harbour Master	Navigation & mooring in harbour
Jamaica National Heritage Trust	Underwater cultural heritage; historic sites on the waterfront
Jamaica Tourist Board/ Tourism Product Development Company	Tourism/ water sports enterprise
Kingston & St. Andrew Corporation (Council)	Development control/ pollution control/ sanitation
Marine Police	Security/ law enforcement
Maritime Authority of Jamaica	Maritime (ship) safety
Ministry of Agriculture	Fisheries
Ministry of Land & Environment	Convenor - Kingston Harbour Steering Committee; policy - lead
National Environment & Planning Agency	Environmental management, development control
National Solid Waste Management Authority	Solid waste/sewage facilities/some gullies
National Works Agency	Sea defense, some gullies
Office of Disaster Preparedness and Emergency Management	Oil spill contingency plans and other response
Petrojam/ Petroleum Corporation of Jamaica	Petroleum, oil pipelines, terminals and other oil handling facilities in the harbour
Port Authority	Port facilities
St. Catherine Parish Council	Development control/ pollution control/ sanitation

5.2.2. Entities which Own or Operate on the Harbour Periphery

Ownership of the harbour is vested in the Crown, by way of the Commissioner of Lands, subject to ownership and interests of Governmental and private sector entities as regards particular facilities and lands on the periphery of the harbour. This is reflected in Table 5.2. Ownership interests bring into issue the exercise of rights, which have a bearing on the management of the rehabilitation of the harbour.

Table 5.2 Entities Owning Land or Operating on the Periphery of or in the Harbour

<i>Entity</i>	<i>Proprietary Interests</i>
Airports Authority of Jamaica	Lands appurtenant to the Norman Manley International Airport on the Palisadoes peninsula, which adjoins or extends into the harbour
Caribbean Maritime Institute	Adjoining lands
Commissioner of Lands	Kingston Harbour (subject to qualifications herein)
NSWMA	Riverton
Central Wastewater Treatment Company	Soapberry site for sewage treatment
Petrojam	Oil pipelines, terminals and other oil facilities in and adjoining the harbour
Port Authority of Jamaica	Port facilities in and on the periphery of harbour
Port Royal Brotherhood	Adjoining areas in Port Royal
Private Sector Entities including: <ul style="list-style-type: none"> ▪ Enterprises such as the Caribbean Cement Company, telecommunication companies with underwater cables, Antilles Chemical Company, petroleum marketing companies (such as Shell, Texaco and Esso), the Morgan’s Harbour Hotel and other entities, some of which discharge waste and effluents directly into the harbour. ▪ Entities comprised in the Shipping Association of Jamaica including shipping agents, wharf owners, terminal operators, stevedoring companies, ship owners and operators in the Port of Kingston ▪ The Royal Jamaica Yacht Club lands adjoining harbour leased until the end of the 21st century 	<ul style="list-style-type: none"> ▪ Property variously owned, leased & licensed
Urban Development Corporation	Sections of waterfront periphery

5.2.3. Entities with Jurisdiction/Responsibilities for Sewage Pollution

Table 5.3 Entities with Jurisdiction/responsibilities in respect of sewage pollution

<i>Entity</i>	<i>Areas of Responsibility/Focus</i>
Developers (Private & Governmental)	Sewage services and treatment facilities
KSAC	Permission to develop and need to provide adequate facilities
Ministry of Health (Environment Unit)	Public Health/sanitation concerns
Ministry of Housing	Sewage services for housing developments under The Housing Act 1969 and Schemes under The Local Improvements (Community Amenities) Act, 1977
National Water Commission	Sewage services and treatment facilities
Central Wastewater Treatment Company	Construction and operation of Soapberry Sewage Treatment Plant
NEPA (NRCA)	<ul style="list-style-type: none"> ▪ Licensing of discharges into harbour (and soon effluent standards) ▪ Development permission ▪ Procuring information and monitoring treatment plant, discharge & area affected
NSWMA	Sewage treatment plants generating sludge
Office of Utilities Regulation	Service standards and rates
St. Catherine Parish Council	Permission to develop and need to provide adequate facilities

5.2.4. Entities with Jurisdiction/Responsibilities for Ship-source Pollution

Table 5.4 Entities with jurisdiction/responsibilities in respect of ship-source pollution

<i>Entities</i>	<i>Areas of Responsibility/Focus</i>
Maritime Authority of Jamaica	Depositing of oil, vessel wrecks & maritime safety

Ministry of Health	Health & Sanitation concerns <i>re</i> spillage
NEPA (NRCA)	Discharge without license
NSWMA	Solid Waste
ODPEM	Response to Spillage

5.2.5. Entities with Responsibilities *re* Other Pollution Sources

Table 5.5 Entities with responsibilities/focus *re* other sources of pollution

<i>Solid Waste</i>	<i>Waste in Gullies</i>	<i>Agricultural Run-off</i>	<i>Industrial Effluent</i>
NSWMA	NWA	NEPA (NRCA)	NEPA (NRCA)
KSAC	NSWMA	Ministry of Agriculture	KSAC
St. Catherine Parish Council	KSAC	Pesticides Control Authority	St. Catherine Parish Council
NEPA	St. Catherine Parish Council		Ministry of Health
Ministry of Health	NEPA (NRCA)		
	Ministry of Health		

5.2.6. Entities Concerned with Resuscitation of Waterfront and nearby Downtown Areas

The two main entities with particular focus on restoration/resuscitation of areas near to or adjoining the harbour are the Kingston Restoration Company (KRC) and the Kingston City Centre Improvement Company (KCCIC), which are both private sector non-profit companies.

The KCCIC is concerned with resuscitation of a particular business district area of Kingston. The stated objectives⁸⁵ of the KRC are:-

“To plan and develop or assist in the planning and development of and thereafter to implement schemes and projects for the repairing rebuilding or restoration of dilapidated derelict or damaged buildings and the erection of other appropriate structures on vacant sites and

⁸⁵ *per Memorandum of Association.*

lots in the City and Parish of Kingston and elsewhere in the Island of Jamaica and generally.

To provide infrastructure amenities parks and public recreation areas with the overall objective of improving the appearance and amenities of the Capital City and other places in the Island of Jamaica in cooperation with the relevant Government departments and authorities concerned with town planning urban development and environmental control.”

5.3. Existing Institutions and Institutional Arrangements

The large number of interests and agencies with responsibility for aspects of Kingston Harbour management listed above points clearly to the need for coordination and focus. The following section examines the UNDP/GEF Study’s recommendations and the existing institutional framework for managing harbour rehabilitation. Section 5.3.2 identifies a number of entities that have been considered as possible alternatives to the existing framework. Section 5.3.3 examines another coordinating body, the National Council on Ocean and Coastal Zone Management, thought by some to be a candidate to take on the role of Kingston Harbour Manager.

5.3.1. The UNDP/GEF Proposal

The UNDP/GEF Planning and Management of Heavily Contaminated Bays and Coastal Areas in the Wider Caribbean Regional Study⁸⁶ states: (emphasis added)-

“There is no single institution charged with the responsibility of managing Kingston Harbour. However, there are several institutions whose activities de facto result in some “management” of the Harbour. It has been recommended that an institution be created with this singular responsibility, the Kingston Harbour Management Authority (KHMA). A feature of rehabilitative efforts around the globe is that they have all benefited from a strong management entity to guide the restoration of the waterway.

“The proposed institution would have a wide cross-section of public, private, and NGO sector institutions (involved with the Harbour) represented at the Board level. The new institution would have to manage the Harbour through liaison and co-operative agreements with the same stakeholders.”

The objectives of such an Authority would be to “provide the legislative and institutional framework necessary for the management of Kingston Harbour” and

⁸⁶ op. cit.

“strengthen the capabilities of the institutions involved with the management of Kingston Harbour.”

However, the UNDP/GEF study acknowledged that *“the creation of a new institution at this time is unlikely to receive support in a regime of downsizing, re-engineering and contraction of the public service.”* The permanent full time secretariat will be kept to a minimum.

The UNDP/GEF study therefore recommended use of The National Steering Committee (NSC), which was already in place to guide the UNDP/GEF Project, in a major pilot project to provide the nascent institutional framework necessary for the rehabilitation of Kingston Harbour. It noted that the NSC, formed and chaired by the then Minister of Environment and Housing, included the desired grouping of stakeholders and was expected to *“continue beyond the life of the project and become responsible for not only Kingston Harbour but all bays and harbours on the island.”*

The NSC was thus proposed to lead an institutional structure, shown in Figure 5.1, in planning, organizing and implementing measures to achieve the rehabilitation and proper management of Kingston Harbour.

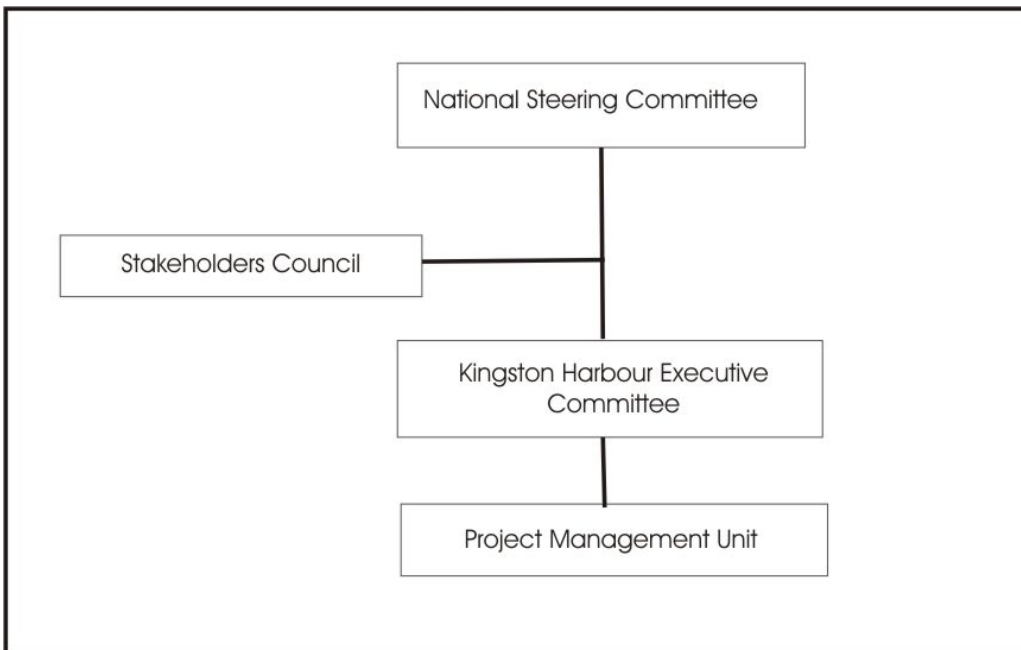


Figure 5.1 The UNDP/GEF Proposed Institutional Framework

The UNDP/GEF Study noted *“... it has been suggested that the Committee could function as a precursor to the KHMA as a pilot project. A decision could then be made at the end of the project, with the benefit of the experience of this pilot project, as to the relevance of establishing an institution like the KHMA.”*

NSC: Under this framework, the NSC was conceptualized as the political/policy-making group, along the following lines:-

- *“Meets at least twice per year functions as a permanent body, dedicated to ensuring the rehabilitation, utilisation, and maintenance of Kingston Harbour in an environmentally sustainable manner;*
- *Sets policy on the development, management and rehabilitation of Kingston Harbour;*
- *Will be comprised of public and private businesses or portfolios which significantly impact on the Harbour as well as delegates from the major international development agencies, banks, donor institutions, community-based organisations and NGO sector stakeholders;*
- *Will interface with the political directorate and make recommendations to Cabinet, to clear the way for any initiatives, or entering into any Agreements, that may be required for fulfillment of project objectives;*
- *May take action to have certain special responsibilities delegated to particular ministries, government agencies, or other entities, whenever it is determined that such action would be appropriate for the furtherance of the mandate of the NSC;*
- *Will be concerned with the monitoring and supervision of the implementation of the up-coming Soapberry Pilot Project, as well as to be actively involved in the necessary on-going strategic planning and management of the overall rehabilitation programme;*
- *Will establish a special sub-committee (Private Sector, NGO, and CBO Stakeholder Council) to assure the involvement and support of the stakeholders;*
- *To assess the efficacy of the creation of a KHMA at the end of the pilot project; and*
- *To give policy direction and guidance to the Kingston Harbour Executive Committee.”*

The Kingston Harbour Executive Committee was conceived as having membership drawn from a number of key institutions including the following:-

- Ministry of Environment;
- Ministry of Finance;
- Kingston & St. Andrew Corporation;
- St. Catherine Parish Council;
- Natural Resources Conservation Authority;
- Water Resources Authority;
- National Water Commission;

- The Port Authority of Jamaica;
- The Planning Institute of Jamaica;
- Metropolitan Parks and Market;
- Kingston Harbour Stakeholders Council;
- Environmental Control Division; and
- Kingston Restoration Company.

The KHEC was conceptualized along the following lines:-

- *“Will function as the executive unit of the NSC, with the Chairman appointed by the Minister;*
- *Will be concerned with the monitoring and supervision of the implementation of the up-coming Soapberry Pilot Project, as well as to be actively involved in the necessary on-going strategic planning and management of the overall rehabilitation programme;*
- *Will function as a board of directors, responsible for overseeing the Project Management Unit (PMU);*
- *Will meet monthly to review progress of the project; and*
- *Is an interim mechanism which may be converted to a statutory body at the appropriate time”.*

The Project Management Unit, was conceived as comprising technical, administrative and accounting personnel to assist in project management and with responsibility, *inter alia*, to:-

- Implement the Soapberry Pilot Project;
- Oversee and assist in engaging the services of consultants, suppliers, and contractors;
- Convene regular meetings of the KHEC; and
- Prepare an annual budget.

The Kingston Harbour Stakeholder Council was conceptualized as having representatives from relevant non-governmental organisations, community-based organisations and private sector groups, with at least three nominees on the NSC, to have biannual or quarterly meetings and provide a formal mechanism for the involvement and support of the stakeholders in the restoration of Kingston Harbour.

In fact, although approved by Cabinet in 1999 and “on the books,” the proposed structure, part Political Directorate and part Executing Agency, did not fully materialize, even as an interim measure, and therefore has not functioned as intended. Indeed, the effectiveness of the interim arrangement depended on one particular Minister to give it impetus. With the departure of that minister, the NSC has not met since 1998 and the KHEC and KHSC have not met at all. Only the PMU functioned as intended.

The MLE held several meetings over the course of the 1998-2002 with sector interests at various levels, trying to work out certain institutional issues. One group that met with some frequency was chaired by one of the stakeholders and dealt with gullies and infrastructure.

The then Permanent Secretary chaired an interagency meeting of Kingston Harbour stakeholders from time to time, in an attempt to deal with issues germane to government before bringing the wider NSC into play. Unfortunately, only low levels of action resulted from the meetings and decisions made by all the stakeholders. The MLE was also responsible for convening a group of stakeholders, including NEPA, to pursue the development and submission to IDB of a grant proposal, resulting in the development, negotiation and implementation of the current project.

The PMU existed for the duration of the UNDP/GEF project, ended when the project ended and began anew when the new IDB project began in 2003. Under the IDB project, the PMU has championed Kingston Harbour, aiming to ensure that it receives a special focus. In the absence of the national Steering Committee, the PMU worked with a specially constituted Kingston Harbour Project Committee.

Housed in the National Environment and Planning Agency, the PMU has access to information and resources within NEPA but is independent of it. However, the PMU lacks private sector participation and with a reporting relationship to a single ministry lacks sufficiently broad-based recognition. An alternative institutional framework is therefore required.

5.3.2. Other Possible Institutions for Carrying Out Harbour Rehabilitation

Other institutions may be considered as entities to manage the rehabilitation of Kingston Harbour.

The first of these is **NEPA**, with an over-arching mandate under the NRCA Act and resources for, expertise and experience in environmental management of Jamaica’s physical resources, including Kingston Harbour. NEPA also issues permits for persons to carry out port and harbour developments, wastewater treatment facilities (including for sewage and industrial waste), land reclamation

and drainage projects and solid waste treatment and disposal facilities, all of which affect ultimately the state of the harbour.

However, the very comprehensiveness of the mandate may result in loss of focus on Kingston Harbour. Moreover, this option would suffer, like the present reliance on the PMU, from the lack of active private sector involvement and funding.

Also to be noted here is the Port Authority which, under the pending - Draft - Port Authority of Jamaica Act, may be given responsibility for “*the conservation, maintenance and improvement of harbours and the approaches thereto.*” However, the Port Authority has a strong focus on commerce, only one of the interests to be balanced in and around the harbour, and lacks authority or influence over hinterland activities.

In Jamaica’s situation, it seems best that the body with responsibility for harbour rehabilitation be a composite one with representation from various interested entities and stakeholders and not a non-composite entity operating under the aegis of a single Minister.

5.3.3. National Council on Oceans and Coastal Zone Management

The National Council on Oceans and Coastal Zone Management was established in 1998 pursuant to Cabinet Decision No. 5/98. Less than a year later, speaking at the first National Coastal Conference - Ocean and Coastal Resource - A Framework for Action, then Minister of State in the Ministry of Foreign Affairs & Foreign Trade, Honourable Anthony Hylton, M.P. described the Council thus:-

“The council is a high level planning body which brings together a wide cross-section of government agencies, the private sector as well as NGOs interested in marine affairs. It has the following as its terms of reference:-

- 1. The formulation of a comprehensive coastal and ocean development policy;*
- 2. To act as the advisory body for coastal and ocean use and development, and to monitor the implementation of policy; and*
- 3. To coordinate human resources development initiatives to enable Jamaica to make sustainable use of its living and non-living resources, and to fulfill its obligations under*

international conventions relating to the marine environment.”⁸⁷

The Council’s actual emergence is ultimately much linked to two pieces of legislation (1) The Exclusive Economic Zone Act, 1991 and (2) The Maritime Areas Act, 1996. These Acts gave effect to aspects of The United Nations Convention on the Law of the Sea, 1982 to which Jamaica is party. Pursuant to the Convention, Jamaica adopted certain positions on marine area delimitation, for which responsibility for implementation, is that of the Ministry of Foreign Affairs and Foreign Trade. The coming into force of the two pieces of legislation had the effect of increasing vastly the marine area over which Jamaica exercises jurisdiction [as Jamaica moved from being an island to an archipelagic state with a huge exclusive economic zone (EEZ) within which it exercised jurisdiction over living and non-living resources].

Thus, Hylton noted that “perhaps the major challenge facing the nation, as it relates to the marine environment, is how best to develop policies which will allow for the promulgation and monitoring of a marine area which is roughly 26 times the size of our land area without overburdening our limited human and material resources.”⁸⁸

McDonald⁸⁹ at the same Conference gave the background to the emergence of the Council.

“The administration of maritime matters has, over the years, fallen to various Ministries and Agencies of Government. The first step in developing a co-ordinated approach came with the passage of the Exclusive Economic Zone Act. But before dealing with the provisions there, it should be stated that it has been the policy and practice of the Government to approach all maritime policy matters which have either a foreign relations impact, or involves the contracting of international obligations, on a multi-disciplinary basis. The 'line' Ministry is the Ministry of Foreign Affairs, but for various objective and subjective reasons, the Attorney-General's Department has played a significant role in this matter.

The inter-agency approach involves the setting up of Task Forces made up of the:

- *Ministry of Foreign Affairs*

⁸⁷ Hon. Anthony Hilton M.P., Minister of State, Ministry of Foreign Affairs & Foreign Trade, Government of Jamaica, 1st National Coastal Conference, Ocean and Coastal Resources - A Framework for Action, Jamaica Conference Centre, March 16-18, 1999, Conference Proceedings, p. 8.

⁸⁸ Ibid, p. 7.

⁸⁹ McDonald, Sheldon (Deputy Permanent Representative of Jamaica, The International Seabed Authority (ISBA) and Special Adviser to the Hon. Attorney-General of Jamaica): The Evolution of Jamaica Maritime Law and Policy Regimes With An Emphasis on Enforcement within and management of the Zone Under National Sovereignty or Jurisdiction, Conference Proceedings, op cit, p. 69.

- *Attorney General's Department*
- *Ministry of Agriculture (Fisheries Department and Survey Department)*
Ministry of Mining
- *Jamaica Defence Force Coast Guard*

From time to time, where various specific interests are involved, they will be pulled into the process. For example, the State-owned Petroleum Corporation of Jamaica, or the Ministry of Information and Culture [which has responsibility for archeological matters], and so on. Invariably, these teams work with Consultants contracted by the Government. The main category of consultants has been hydrographers.

The EEZ Act empowers the Minister to establish an Advisory Committee. The Advisory Committee was activated in 1992, but for various reasons, the order has not yet been gazetted [see infra]. At the inaugural meeting, thought was given to utilizing the Committee as the starting point for the developing of a comprehensive institutional approach to all law of the sea issues. In particular, regard was had to the provision of Section 21 of the Act, which was cited above. The areas deemed susceptible to regulations included:

- *Activities related to the economic exploration or exploitation of the Zone;*
- *The authorization, control and supervision of scientific research therein, and the recovery of archeological and historical objects;*
- *Preservation and protection of the marine environment and the prevention and control of marine pollution;*
- *Determination of the terms and conditions of joint ventures or other co-operative arrangements to be made in the Zone; and*
- *Specifying the requirements for training personnel and the transfer of technology.*

It was therefore felt the Committee could serve the useful purpose of beginning to give thought to these issues outside of the more discrete functions to which it was assigned in the Act.

*The non-formalization of the Committee was perhaps propitious, because some three years ago a Task Force charged with doing a comprehensive review of how maritime law and policy issues are dealt with -from initiation to implementation - was set up. This process led to certain administrative and institutional reforms. In regard to the latter, it must also be noted that the Government had stated and reiterated an intention to establish a **Law of the Sea Institute**.*

The framework within which an Institute or other organization would operate, was envisaged as incorporating:

- a. *The development of comprehensive and detailed policies and plans for the short-, medium- and long-term exploration and exploitation of the living and non-living resources of the EEZ;*
- b. *The development of effective control and enforcement regimes in the following areas:- protection and preservation of the marine environment; minerals exploration and exploitation; marine scientific research; and exploitation of living resources.*
- c. *The development of initiatives aimed at securing and consolidating Jamaica's participation in CARICOM EEZ Policy formulation and implementation;*
- d. *Developing on-going approaches to Jamaica's participation in the regime and institutions set up under the Montego Bay Convention;*
- e. *Carrying out on-going legal and technical research in all facets of Law of the Sea;*
- f. *Devising appropriate strategies as regard delimitation, fisheries and related agreements with other Caribbean countries; and*
- g. *Writing policy papers which could form the basis of draft legislative and regulatory instruments.*

The mandate of the Task Force included the power to revisit this issue in light of present circumstances and to make appropriate recommendations to the Minister for referral to Cabinet.

These recommendations led to the establishment of the Council on Ocean and Coastal Zone Management.”⁹⁰

The Exclusive Economic Zone Act, 1991 provides for “...an advisory committee to advise the Minister in relation to licenses affecting the zone.”⁹¹ The licenses referred to here are licenses to carry out activities for exploration or exploitation of the living or non-living resources in the Exclusive Economic Zone. The Act empowers the Minister to require, by Order, his concurrence or specify conditions for the issuance or revocation of such licenses. This gives him control over activities in the zone, which the Act imports he would exercise with the benefit of advice from the advisory committee.

McDonald had suggested that in light of the efforts of the Ministry “to streamline marine law and policy”, the requisite Order should be made by the Minister requiring that a license issued by the relevant government agency as regards activities in the EEZ, should only be issued with “his concurrence” or “only be

⁹⁰ Ibid, pp. 75-77.

⁹¹ per Section 11(2).

issued or revoked in such circumstances and subject to such conditions as may be specified in the Order.”⁹²

Such an order should “*concomitantly, make provision for the advisory committee*”, thereby clearing the way for the establishment of the advisory committee under **The Exclusive Economic Zone Act, 1991**.⁹³

No such Order has been made.

However, arising from the need for a “comprehensive policy for ocean and coastal resources management” resulting in “needless delay in initiating programs that address critical coastal management issues”, the NCOCZM was established in 1998, based on Cabinet Decision No. 5/98, with a mandate to “define national policy, promote co-ordination of administrative and operational functions among government agencies and civil society”.⁹⁴

Membership of the Council comprises heads or senior officials of agencies and entities with roles and functions pertaining to ocean and coastal affairs. These agencies and entities include:-

- Attorney General's Department;
- Caribbean Coastal Area Management Foundation;
- Caribbean Maritime Institute;
- Centre for Marine Sciences, UWI, Mona;
- Division of Mines and Geology, Ministry of Mining and Energy;
- Fisheries Division, Ministry of Agriculture;
- Jamaica Defence Force -Coast Guard;
- Maritime Authority of Jamaica;
- Ministry of Land and Environment;
- Ministry of Tourism and Sport;
- Ministry of Transport and Works;
- Ministry of Water and Housing;
- National Council on Science and Technology;
- National Environment and Planning Agency;
- Planning Institute of Jamaica;
- Port Authority of Jamaica;
- Shipping Association of Jamaica; and
- Survey Department, National Land Agency.

⁹² See: **Section 11(1)**, *ibid.* McDonald, *op. cit.*, p. 81.

⁹³ *Ibid.*

⁹⁴ Green Paper No. 9/01 – Towards an Ocean and Coastal Zone Management Policy in Jamaica – The National Council on Ocean and Coastal Zone Management, p.5. (Note: The Green Paper became a White Paper in 2002.)

The Council, which resides in the Ministry of Foreign Affairs and Trade, identified the need for a “rational, harmonized national policy on ocean and coastal resource management.”⁹⁵

Consequently, the Council produced Green Paper Number 9/01 – Towards an Ocean and Coastal Zone Management Policy in Jamaica, with the policy aim being to “achieve sustainable development of coastal resources”,⁹⁶ inclusive of:-

- Enhancing national institutional capacities for integrated coastal zone management;
- Integrating planning and management of the fisheries, agriculture and forestry sectors into coastal area management; and
- Preventing and controlling environmental degradation in coastal areas.

As regards the proposed role of the Council and financial arrangements, the Green Paper provides as follows:-

“The main role of the Council is to coordinate the activities that support the management of the ocean and coastal zone. In its coordinating role, the Council seeks to fulfill the following objectives:-

- *Support government's initiative in promoting sustainable use and management of ocean and coastal resources.*
- *Provide a high level forum for the discussion of important ocean and coastal issues, priorities, and best practices.*
- *Foster partnerships between the public and private sector and non-profit organizations (NGOs) geared towards the management of coastal resources*
- *Advance public understanding and support for the key issues of sustainable development of coastal resources.*
- *In its present form, the Council functions as a high-level multi-disciplinary and inter-agency advisory body on matters related to ocean and coastal zone management. In essence, the Council brings together Ministries; NGOs and the private sector to discuss and advise on matters that are of national importance which affect the coastal zone of Jamaica. The Council however does not yet have power to implement policy and/or strategies for the management of the coastal zone that it may support. The final decision to implement and/or manage a particular issue that*

⁹⁵ Ibid.

⁹⁶ Ibid, p. 26.

develops, or is discussed at the Council regarding the ocean and coastal zone, rests with the line ministry.

Furthermore, the Council at present does not have the technical expertise or the manpower that would be necessary for day-to-day operation in implementation of the Policy. An existing agency involved in matters of ocean and coastal zone is not likely to fulfill this mandate.

The following therefore is the existing lacuna, which will hamper the effective implementation of the Policy:

- The Council only has an advisory role and lacks a legal mechanism for a direct involvement in overseeing the implementation of the Policy.*
- The Council lacks the financial mechanisms necessary to oversee the implementation of the Policy.*
- There is little awareness within the various government agencies and also among the public on the role of the Council.*
- There is little awareness at the Council on the ongoing as well as future programs and projects related to ocean and coastal zone management being undertaken by agencies not necessarily represented at the Council.*
- Grass-root level organizations are not adequately represented on the two working groups of the Council.*
- To have an effective implementation of the Policy, it therefore becomes apparent that the coordinating mechanisms need to be strengthened either through the Councilor, or by assigning a body to implement the Policy.*

In light of above, it is important that the Council have a new role that will enable it to have a direct involvement in overseeing the implementation of the Policy on Ocean and Coastal Zone Management. Only then can the goal of integrated coastal zone management be achieved in the future. A more pragmatic approach in the present circumstances would be to strengthen the existing role of the Council. To that effect, the following is being proposed:

- The advisory and coordinating role of the Council should continue. However, the coordinating role needs to be established within a legal framework.*
- Statutory authority must be granted to the Council to ensure accountability.*
- Develop a mechanism for financial advocacy in order to administer funds. The Council should therefore:*
 - Be empowered to formulate a budget for its activities on an annual basis;*

- *Have its own operational budget as well as be in a position to disburse funds for the implementation of the Policy.*
- *Additionally, it is being proposed that the future role of the Council should include:*
 - *Collection and consolidating information on existing programs and projects relating to ocean and coastal zone management;*
 - *Monitoring of existing, as well as proposed programs and projects relating to ocean and coastal zone management;*
 - *Sensitizing the various agencies and the public at large on the role of the Council;*
 - *Developing links to local government to ensure broad-based participation in decision-making, especially from the grass-root level.*
- *Development of a management structure to oversee the implementation of the Policy.*
- *Establishing an ocean and coastal management trust fund.”⁹⁷*

Subsequently, the Green Paper evolved into a White Paper. Ministry Paper of 24th July, 2002, (White Paper: Jamaica’s New Ocean and Coastal Zone Management Policy) provides as follows:-

“... 16. At this time, the Council functions as a high-level multi-disciplinary and inter-agency advisory body on matters related to ocean and coastal zone management. The Council membership includes the relevant ministries and agencies of Government, private sector and non-government representation. The Council does not as yet have the authority to ensure implementation of the Policy or strategies for coastal zone management. If the Council’s mandate is to be achieved, the Council should have oversight of the implementation mechanism and to present options to Cabinet.

17. *The following changes are being proposed with regard to the future role of the Council:*

- *Statutory authority should be granted to the Council to set out its role, functions, terms of reference and jurisdictional control;*
- *The Council should submit bi-annual reports to the Cabinet on its work; and,*

⁹⁷ Ibid, pp. 27-28.

- *The Council may be asked to oversee projects from time to time. The Council's role would be to delegate supervision, as well as to monitor implementation.*

18. *Additionally, it is being proposed that the future role of the Council, through its Secretariat, should include:*

- *Data gathering and consolidation of information on existing programs and projects relating to ocean and coastal zone management;*
- *Monitoring existing, as well as proposed programs and projects relating to ocean and coastal zone management;*
- *Sensitizing the various agencies and the public at large on the role of the Council; and*
- *Developing links with local government to ensure broad-based participation in decision-making, especially from the grass-root level.*

19. *The financial requirement noted in the Action Plan is US\$6,887,670 over 5 years. However, the major portion of the funds is for the proposed Centre of Excellence, which has a cost of US\$4.59 million. This is a project to create an ocean and coastal research institute as a networking locale for the data and other resources, and includes the procurement of a research vessel for which the project funds are being identified externally. The "real" cost for implementation is therefore US\$2.30 million over the five-year period."*

The suitability of the Council as a candidate to take on responsibility for overseeing Kingston Harbor's rehabilitation and development is further explored in Section 6.

6. Institutional Framework Selection -- Criteria & Options

6.1. *Selection Considerations*

The existing legal regime and institutional arrangements, discussed in the preceding two chapters, were established or tried out to meet specific objectives. However, none of those objectives can be said to match the expansiveness of the emerging vision for Kingston Harbour and its waterfront presented in Chapter 3.

This chapter examines the desired functions of a coordinating institutional framework and the criteria for selecting or designing an effective framework. In Section 6.2 it draws on international experience, including selected cases summarized in Appendix I, to throw further light on the demands that achievement of the Kingston Harbour vision will make. Section 6.3 makes clear that dissemination and implementation of the vision needs a comprehensive and integrated management structure, able to address a large area of influence, attract private as well as public sector involvement and funding and to maintain focus and interest over a long period.

Section 6.4 presents a list of activities that a management entity will need to undertake. These activities and Jamaican and international experience provide the basis defining the criteria to be met by an effective institutional framework and therefore to be applied in selecting or modifying an existing option or designing a new framework (Section 6.5).

Section 6.6 screens other existing management entities and possible new arrangements.

Finally in Section 6.7, the three most credible options are described and assessed in terms of their capacity to meet the criteria. The assessment aims to guide selection of the arrangement most likely to provide consistent championship of the vision, effective coordination and a focal point for the various actors and activities pertaining to harbour rehabilitation and development.

6.2. *The Need for Comprehensive and Integrated Management*

6.2.1. **The Area of Influence**

The international cases presented in a previous document for this project,⁹⁸ address harbours contaminated primarily by point sources of sewage and industrial waste. These pollutant sources, including ship-generated wastes, also affect Kingston Harbour. However, experience with the once severely-polluted

⁹⁸ Kingston Harbour Rehabilitation Project, Component A, Harbour Remediation Experiences Report, January 2005.

Chesapeake Bay and San Francisco Bays (summarized in Appendix 1) underscores the importance of addressing all possible sources of pollution.

For example, in the case of San Francisco, scientists and public officials are recognizing that the essential step of addressing the major point sources of pollution is far from the complete solution. Control of the non-point petrochemicals, agricultural chemicals and household chemicals will require far greater will, imagination, vigilance and cooperation among all stakeholders throughout the huge San Joaquin watershed (see Appendix I, Case VII).⁹⁹ Similarly, despite significant advances since the Chesapeake effort began in 1985, the contribution of Pennsylvania's agriculture to poor water quality has become clear only recently. Although Pennsylvania shares no part of the extensive Chesapeake waterfront, agricultural runoff reaches the bay by means of tributaries and groundwater transport (see Appendix 1, Case 1).

Both these cases demonstrate the importance of establishing a large enough area of influence to be able to address the myriad non-point sources of pollution.

6.2.2. The Time Frame - Harbour Cleanup

Harbour cleanup and waterfront redevelopment both take many years of sustained effort. As noted, the Chesapeake Bay cleanup effort has been under way for twenty years but is continuing to evolve, deepen and expand its coverage. The cleanup of San Francisco Bay and preparation of a plan for managing waterfront land use began even earlier, in the early 1960s. The plan, implemented by the specially created Bay Conservation and Development Commission and the Association of Bay Area Governments, has been highly successful. However, some forty years later, in addition to the continuing effort to control pollution, battles are still fought over controversial public and private development and infrastructure proposals, the 400-mile Bay Trail is still not complete and wetland restoration continues.

6.2.3. The Time Frame - Waterfront Redevelopment

In the case of waterfront redevelopment, the pioneer effort in Baltimore began some three decades ago (Appendix I, Cases II and III). Despite major accomplishments, the effort is far from complete and the plan is now being revisited. Nicholas Falk, a participant in and critic of US and European waterfront redevelopment plans acknowledges "the understandable desire to

⁹⁹ Fisheries Division Director, Andre Kong, in personal communication, 2004, expressed concerns similar to those in Appendix I Case VI

achieve instant results” but advises: “[D]evelopment over time allows a richness of character versus the sameness of a onetime ‘Big Bang’.”¹⁰⁰

“The successful international examples have shown the need to evaluate success over a longer period and a wider range of objectives than has typically been the case to date. There is no single measure, and instead periodic environmental audits and health checks are required. As the projects are often benefiting from significant public funds, and are of wider public interest, it would be valuable to make this process much more public too. One way is to set up a new awards scheme for urban waterfront projects. The checklists should provide the basic framework for submitting entries and evaluating them. The results could then be published, preferably on an Internet web site as well as in a printed form, to make the process of learning from experience much easier. The process of evaluation should also be linked to publicity events. Indeed one of the most important lessons to emerge from successful US projects is the idea of ‘celebrating a victory every six months’.”¹⁰¹

6.2.4. Lessons for Kingston in Integrating Harbour Cleanup, Supporting Actions and Redevelopment

The cases cited above and others presented in Appendix 1 provide important experience for Kingston. Point sources of sewage and industrial waste, as well as ship-generated wastes impact Kingston Harbour and are being addressed by the cleanup programs summarized in Section 2.1. However, the plans for improved sewage treatment have been in place for some two decades and remain to be implemented.

The fact that action is soon to begin, through the new Central Wastewater Treatment Company (formed by UDC, NWC and Ashtrom), is thought to be due in some measure to the continuing attention drawn to the harbour by the PMU, underscoring the value of having a permanent “champion.” It may also suggest a growing recognition of the link between improved water quality and improved economic and development prospects.

While point sources cause the great majority of Kingston Harbour’s pollution, as with Chesapeake Bay and San Francisco Bay, non-point sources present a growing and perhaps more difficult challenge. Kingston Harbour is the downstream recipient of pollution originating from the Rio Cobre Basin and a major part of the Hope River Basin. (In fact, the entire Hope River Basin affects the harbour, since the integrity of the Palisades tombolo depends greatly on sediment from the Hope River and the health of the Port Royal Cays is affected

¹⁰⁰ Nicholas Falk, *Turning the Tide*, quoting *The Urban Waterfront Manifesto*, URBED, 2004

¹⁰¹ Nicholas Falk, *op. cit.*

by sewage from the Harbour View plant.) The pollution includes agricultural nutrients and chemicals, sedimentation from cleared hillsides, urban run-off, persistent organic pollutants, including petro-chemicals, and unmanaged solid waste.

Much of the sustained effectiveness of sediment removal, sewage treatment, solid waste management and control of non-point pollution for Kingston Harbour will depend on implementing cleanup projects within the context of the integrated program of specific actions described in the Kingston and St. Andrew (KSA) Environment and Development Study.¹⁰² Table 6.1 highlights those recommendations.

Table 6.1 Summary of Recommended Key Environment and Development Actions for KSA

#	Action	Objective
1	Recommit to protection of undisturbed forest and regeneration of degraded, disturbed forest.	Reduce erosion and sedimentation and slow runoff
2	Recommit to protection of flat and hillside agricultural land and sustainable practices.	Protect food security, export opportunities, employment and reduce the flow of agricultural chemicals into KH.
3	Accommodate growth projected for the southeast in the KMA at more efficient densities.	Protect agriculture, enhance infrastructure and services, finance comprehensive sewerage.
4	Sewer the entire city and provide tertiary sewage treatment by using existing and created wetlands.	Protect KH and the corals of the Port Royal Cays; provide a key element in a green harbour edge.
5	Rebuild green gullies with vegetated, permeable channels, stepped, gabion basket walls, and check dams. Use phyto-remediating plants in the base of the gullies.	Slow sedimentation of KH; facilitate aquifer and harbour cleanup; reduce heat island; provide alternative circulation, forest to harbour connections; provide urban agro-forestry and discouragement to disposal of solid waste in gullies.
6	Build provision for garbage separation, transfer and composting into all projects; support micro and small businesses in solid waste management	Reduce solid waste flow entering the harbour; reduce pressure on landfill; provide formal support for new forms of employment/self-employment.

The recommendations in Table 6.1 focus on achieving environmental sustainability. As Chapter 3 emphasized, harbour rehabilitation also makes possible more effective use of the waterfront for social and economic improvement. By interesting public and private investors in opportunities for

¹⁰² Section 3.5, Analytical Study on Environment and Development, Prepared by ENACT for the Kingston & St. Andrew Sustainable Development Plan, 2003.

profitable and appropriate development, the constituency supporting rehabilitation efforts can be deepened.

Realizing the potential for economic and social development will require a body that can make defensible, transparent and equitable decisions regarding the use of land and water. The evidence of a fair and broadly beneficial decision-making process can encourage cooperation among stakeholders and diminish the more damaging competition that commonly exists.

6.3. Lessons for Kingston in Establishing an Institutional Framework

6.3.1. The Importance of a Champion

Leadership is crucial where development values are low, public interests are often reluctant to share resources and successes and the private sector is wary of the risks involved. The long-term nature of a cleanup and redevelopment effort requires a visible champion, independence from short-term political agendas and an organization that both represents and reports to the wide range of public and private participants and stakeholders.

In the case of San Francisco Bay, three citizens began a movement that caught the imagination of the many and various stakeholders. The movement forced passage of legislation to set up an agency with the visibility and authority to champion improvement of the Bay's water quality and balance public and private interests in use of the bay and its waterfront.

6.3.2. The Need for a Multi-Jurisdictional Authority

The San Francisco and Chesapeake bays are bordered on and affected by multiple jurisdictions. The Chesapeake effort has been led by an NGO and individual states. It might have had greater effect under a formal body with power as well as influence over the contributing states.

The San Francisco Bay Conservation and Development Commission (BCDC) became a permanent agency in 1969, and continues today, the first coastal zone management agency and the model for most others in the world. The agency was set up with broad public support and power to transcend those of existing jurisdictions within the waterfront zone. It has carried out its mandate to carry out and coordinate cleanup actions and plan and manage waterfront land use, with great success. It has prevented most additional Bay fill and achieved a small net gain in the size of the Bay through tidal marsh restoration. Agency permits for development along the Bay have mandated new public shoreline

access, increasing access from four miles in 1969 to over 200 miles today. Nevertheless, as discussed in Section 6.2.1, it is now recognized that the body should have had expanded power to manage pollution sources throughout the contributing basin.

6.3.3. The Need for Power, Representation and Funding

There are lessons for Kingston from its companion harbours in the UNDP/GEF Study, Planning and Management of Heavily Contaminated Bays and Coastal Areas in the Wider Caribbean. Each took a different approach to setting up the necessary institutional framework to implement the study recommendations. In Cuba the approach was to “*create a Havana Port Authority through the merger of the various managerial and regulatory organizations concerned with the management of the Bay.*”¹⁰³ Colombia took a military approach to the needs of Cartagena, setting up an organization funded under the military budget and headed by an Admiral, who reported to the Mayor of Cartagena. In Costa Rica, the task of managing Puerto Limon was assigned to a university group.

None of these efforts has achieved a successful outcome or provided a suitable management model. Each lacked at least one essential ingredient. The missing ingredient in the case of the Havana Port Authority, the “quintessential” government agency, was funding, in Columbia, it was lack of broad representation, and in Costa Rica, it was lack of political power.¹⁰⁴

It is not clear whether any of the three approaches met the criteria regarding area of influence or long time frame, learning from the experience of the San Francisco and Chesapeake bays (Sections 6.2.1 and 6.2.2). Nor is it apparent that they emphasized private sector involvement, learning from the experience of successful waterfront redevelopment models, including Baltimore and Boston.

6.3.4. The Importance of Attracting Partners and Private Sector Support

New forms of partnership and funding are needed to mobilise resources over a sustained period, attract contributions and encourage development ventures. Contributions to the cleanup effort from agencies, donors and private interests may require establishment and management of a trust fund. In the area of redevelopment, the United Kingdom, for example, has found that “the availability of ‘challenge’ funding through the ‘Single Regeneration Budget’ and Lottery funds, has encouraged alliances of public sector bodies to come together,

¹⁰³ See: Global International Waters Assessment (GIWA), Regional Assessment 4, Caribbean Islands, p. 90.

¹⁰⁴ Cowell Lyn, personal communication, December 2004.

where previously they might have squabbled or waited for a private developer to take the initiative.”¹⁰⁵

The successful rehabilitation and redevelopment models in the United States and Europe have shown that new forms of partnership and funding are needed to mobilise resources over a sustained period, attract contributions and encourage development ventures. They also suggest that contributions to the cleanup effort from agencies, donors and private interests may require establishment and management of a trust fund. In the area of redevelopment, the United Kingdom, for example, has found that “the availability of ‘challenge’ funding through the ‘Single Regeneration Budget’ and Lottery funds, has encouraged alliances of public sector bodies to come together, where previously they might have squabbled or waited for a private developer to take the initiative.”¹⁰⁶

6.3.5. Lessons from Experience in Jamaica

A number of factors resulted in the failure of the structure proposed by UNDP/GEF to materialize. A parallel appears to exist in the experience with another major improvement effort, the National Poverty Eradication Programme (NPEP). An assessment of the NPEP¹⁰⁷ made a number of findings that have relevance to future efforts to engage a wide range of stakeholders in Kingston Harbour rehabilitation and redevelopment:

- *There was a lack of shared vision of the NPEP.*
- *There was a lack of commitment to programme ideals.*
- *The location of the NPEP on the scale of national development policy preferences and priorities for ministerial task and programmes was seemingly low.*
- *Bringing together stakeholders does not in itself equal successful implementation. Part of the reason for this is that the stakeholders different stakes in the programmes’s success.*
- *There was a lack of desire by each entity to be subordinate to another entity.*
- *There was an assumption that patronage of the MHPM would ensure high political profile, clout and therefore success.*
- *The project was only as good as its coordinator’s capacity to marshal resources and support of those implementing the project recommendations.*

¹⁰⁵ Nicholas Falk, op. cit.

¹⁰⁶ Nicholas Falk, op. cit.

¹⁰⁷ A Critical Assessment of Jamaica’s National Poverty Eradication Programme”, written by Dr. Philip Duku Osei, SALISES, UWI, published in the Journal of International Development, Vol. 14, pp757-772 (2002).

6.4. *Needed Actions*

It is clear that realization of the desired outcomes of Kingston Harbour cleanup and the economic benefits associated directly and indirectly with them will require carefully orchestrated management. The following is a list of the main functions that that the desirable management entity would undertake:

Core Functions:

1. Ensure treatment of Harbour as a vital physical/economic resource to be properly managed;
2. Champion and oversee the harbour's rehabilitation, conservation, management and development (in accordance with vision, statutorily delineated plan, objectives, stipulations and performance standards);
3. Explain and demonstrate the linkages between cleanup and private investment;
4. Engage the private sector, securing and sustaining its interest as willing partners and developers and facilitating its financial input;
5. Establish and administer a wetlands mitigation bank;
6. Promote the establishment of a green harbour front;
7. Ensure financial sustainability and secure funding going forward;
8. Serve as initiator / facilitator of private sector entity / trust devoted to Kingston Harbour rehabilitation;
9. Enter into agreements, memoranda of understanding with relevant entities for management of the harbour;
10. Make regular reports to Parliament & civil society to maintain interest, attention;
11. Set targets, arrange events and communicate with the media.

Support Functions:

12. Coordinate and assure the performance of planned point-source clean-up projects;
13. Advise on and monitor actions throughout the entire area of influence aimed at curbing non-point sources as well as point sources of pollution;
14. Promote a holistic approach to the hinterland cleanup and management;
15. Encourage integration of physical cleanup projects with a set of supporting actions;

19. Advise on, monitor and coordinate water use and land use around the harbour;
20. Maintain a database on the harbour, including its value, water quality and general state as well as other pertinent information;
21. Assist in providing expert evidence as regards damage to Kingston Harbour *re* spills in harbour or other pollution incidents;
22. Prepare drafting instructions for needed legislative changes for increased harmonization and effectiveness
23. Consider relevant international treaties, rules, regulations, practices and promote their application as appropriate.

The core functions would be exclusive to the management entity. In all other cases, the role of the management entity would be one of advice on and review of functions, projects and services carried out by existing agencies.

6.5. Criteria for Selecting or Designing an Institutional Arrangement

The foregoing international lessons have shed light on the needed functions of a Kingston Harbour management entity. They have also suggested criteria for how it should be constituted. Experience with the UNDP/GEF project suggests others. From all of the past experience, one fundamental lesson is clear:

Only an organization with prominence and authority that keeps the comprehensive vision regularly, consistently and imaginatively before the public can:

- Instill an understanding among stakeholders that they cannot do anything and everything they wish because of inherent conflicts,
- Engage stakeholders in collaboration rather than conflict in the use of the harbour and its waterfront,
- Engage the national government and establish the harbour as a top national priority, and
- Gain the support of agencies concerned about protecting their roles and responsibilities.

That organization will therefore require official commitment, resources and a dedicated and capable staff. From the outset and throughout a long-term effort,

it will need to carry out its functions with a constant focus on visioning, planning, conflict resolution, marketing and fund raising.

The analysis of the institutional status quo and feedback from extensive consultations suggest that the selected institutional structure should not only be able to carry out the needed functions but also meet as many of the following criteria as possible:

1. Be a strong management entity, consistent with the pattern established for or learned from management of other major bays;
2. Support rather than supplant or duplicate the mandated roles and responsibilities of existing stakeholders;
3. Have the authority and status to co-ordinate the various actors and activities with respect to the harbour;
4. Be able to sustain a specific focus on Kingston Harbour rehabilitation and redevelopment, perhaps over several decades;
5. Be able to ensure that Kingston Harbour's needs do not get lost or subsumed in the morass of an existing entity's extensive remit;
6. Provide functional permanence/institutional longevity with minimal risk of loss of focus due to changes in leadership;
7. Minimize vulnerability to inadequate political incumbent interest/effort;
8. Have permanent conduits and ready channels to all actors at the highest levels of decision making;
9. Be able to secure funding on a sustained and independent basis;
10. Be able to engage the private sector, as willing partners in financing and implementing harbour cleanup and waterfront improvement and development or redevelopment;
11. Be able to take a holistic approach to activities and realities of the hinterland related to the clean-up and management of the harbour;
12. Be able to achieve an appropriate balance among competing uses and values of the harbour, its resources and waterfront lands; and
13. Require the least new cost, bureaucracy and legislation consistent with meeting the criteria listed above, in consideration of resource constraints.

6.6. Summary Assessment of Existing Options and Proposals

Section 5 presented and discussed the possible existing institutions and noted that while there are various institutions with some relation to the harbour none is

specifically focused on the harbour as a physical and economic resource to be conserved and managed. Section 5 also set out new arrangements tried and/or proposed to date. The preliminary screening exercise eliminated a number of options from further consideration. As the following summary shows, these options would not be able to undertake the desired functions and meet the selection criteria.

- **KSAC.** While KSAC has responsibility for planning and approving development around the harbour, it lacks the mandate to coordinate the actions of other key stakeholders, such as the Port Authority, St. Catherine Parish Council and the Municipality of Portmore. Moreover, the magnitude of its remit and the fact that it is subject to change of political leadership means that the desired longevity and sustained focus would not be assured.
- **KRC, KCCIC.** Both non-profit independent entities view the rehabilitation of Kingston Harbour as a welcome complement to their efforts. However, their focus is terrestrial and presently limited to particular areas and related projects.
- **UDC.** UDC has a broad mandate characterized by relatively short-term focused projects as needs and opportunities require. It is therefore unlikely that it could provide the desired sustained focus on the harbour.
- **NEPA (NRCA).** The very comprehensiveness of NEPA's mandate may result in loss of focus on Kingston Harbour. Moreover, this option would suffer from lack of active private sector involvement and funding.
- **Port Authority.** The Port Authority has a strong focus on commerce, only one of the interests to be balanced in and around the harbour, and lacks authority or influence over hinterland activities.
- **Marine Park.** For a number of legal considerations, discussed in Section 4.2.6, and other extra-legal reasons, a proposal that Kingston Harbour should be declared a marine park towards its rehabilitation and management would appear to be misconceived.

Chapter 7 presents and assesses the three surviving candidate institutional frameworks. Two of these build on the intent and the lessons of the UNDP/GEF Proposal, described in Section 5.3.1. The third suggests a modification of the NCOCZM, described in Section 5.3.3.

7. Description and Assessment of Framework Options

7.1. The Three Candidate Models

Three options could meet the need for an entity with the breadth and authority to lead and coordinate, but not supplant, the appropriate functions of existing agencies and other stakeholders. They are:

- A new, independent Kingston Harbour Corporation (the Consultants’ recommended option);
- A modification of the *status quo*—focused on the Ministry of Land and Environment and NEPA; and
- A modification of the National Council on Ocean and Coastal Zone management (NCOCZM).

7.2. A Kingston Harbour Corporation (KHC)

7.2.1. Proposed Structure

This proposed new entity, “The Kingston Harbour Corporation,” diagrammed in Figure 7.1, would depart from the current arrangement (a non-composite entity operating under the aegis of a single Minister). It would be a composite entity with representation from various interested agencies and stakeholders.

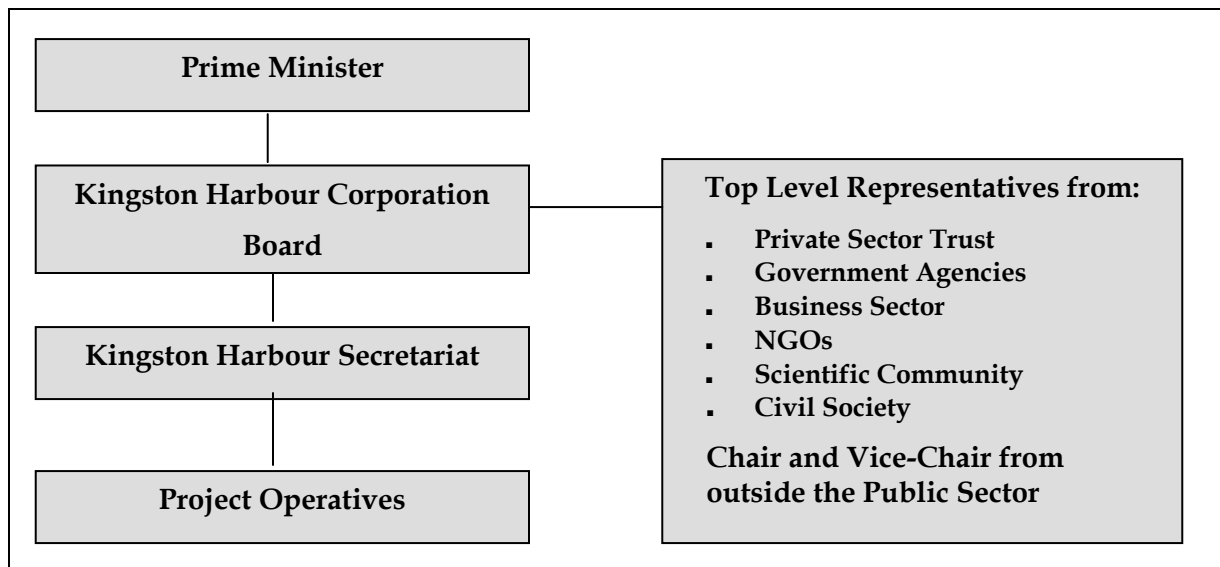


Figure 7.1 Recommended Kingston Harbour Corporation

It would be important to confer on the new entity the status necessary to manage Kingston Harbour and its clean-up and redevelopment effectively. This would require making it a permanent establishment, buttressed by legislation.

The entity would be independent, non-profit and non-partisan. It would report to the Prime Minister and be housed in a setting and at a location, such as NEPA) most conducive to the carrying out of its mandate. The entity would benefit from this sign of its responsibility to the government as a whole.

The Board. The KHC would have a Board of top-level representatives from relevant government agencies, the scientific community, including marine and environmental professionals, the business community, NGOs, other stakeholders and a newly created private sector trust entity for Kingston Harbour, including:-

- Ministry of Finance;
- Ministry of Land & Environment;
- Ministry of Health – Environmental Control Division;
- Ministry of Water and Housing;
- Ministry of Tourism;
- National Environmental Planning Agency;
- Port Authority of Jamaica;
- Planning Institute of Jamaica;
- Kingston & St. Andrew Corporation;
- St. Catherine Parish Council;
- Portmore Municipality;
- Kingston Center City Improvement Company;
- Urban Development Corporation;
- Kingston Restoration Company;
- National Water Commission;
- Central Wastewater Treatment Company;
- Centre for Marine Sciences, UWI;
- National Council on Science and Technology;
- Shipping Association of Jamaica;
- Ministry of Transport & Works;
- Ministry of Agriculture, Fisheries Division, Forestry Department, RADA;
- Division of Mines and Geology, Ministry of Mining;
- Private Sector Organization of Jamaica;
- Jamaica Hotel & Tourist Association;
- Donor Organizations;
- The Scientific Community;
- Interested NGOs; and
- Community-based Organizations

The positions of chairman and vice-chairman of the Board of the Kingston Harbour Corporation would be held by persons outside of the public sector, with the chairman being ideally a person with sufficient dynamism, national clout and influence to champion effectively the Kingston Harbour cause.

The chairman and vice-chairman, being outside the public sector, could help in avoiding conflicts of interest arising where the chairman is from a stakeholder public sector organization with a vested interest in an issue for determination.

A Kingston Harbour Plan. The KHC would have power to act in relation to a statutorily delineated plan, developed and revised periodically, with the participation of the stakeholders, and to which they would be bound. The plan would be the pivotal frame of reference and the Corporation's geographical reach would be determined accordingly.

The Secretariat. The entity would operate with a small Secretariat, with responsibility to, *inter alia*, assist in procuring funding for the entity, the rehabilitation and budgetary requirements of other entities involved with or affecting the rehabilitation. The KHC would carry out all twenty core and support functions (see Section 6.4) through Board actions in relation to the plan, a focused Secretariat and a project-driven approach.

The secretariat (including personnel with project-writing, funds-garnering and project management skills) could utilize personnel from the current Kingston Harbour Project unit and personnel seconded from government entities so as to minimize costs.

The Private Sector Trust. The new entity should play a catalytic role in the establishment of a private sector/civil society trust towards the rehabilitation of the harbour, which would have representation on the Board of the new entity and be instrumental in garnering funding to complement that obtained by the new entity as well as help to otherwise attract private sector and public support.

The trust could be established by way of a non-profit (tax exempt) company, limited by guarantee, involving the business sector, donor entities, environmentalists/scientists, community-based organizations, concerned citizens and other members of civil society, with a Board of Directors composition reflecting such involvement and requisite fund-raising, accounting, marketing/public relations and legal expertise.

7.2.2. Proposed Legislative Changes

In order to implement the desired institutional changes and promote a new vision for Kingston Harbour, legislation is needed to:-

- Provide for establishment of the Kingston Harbour Corporation and its mandate;
- Rationalize and clarify responsibilities of various governmental agencies as regards particular pollution-sources especially sewage, the role of the NWC, government developers exempted from particular legislative controls re provision of sewerage facilities in schemes. It should include matters such as the cleaning of gullies and provision of sea defenses, for which there is no government agency specifically mandated with overall or residual responsibility;
- Address liability and compensation for pollution of Kingston Harbour from ship-source pollution (quickly enact legislation to provide protection in the event of a major or other significant spillage of oil or other polluting substance and widen what can be claimed for in court, in the event of such spillage);
- Provide incentives for utilization of EMSs (for entities on the rim of the harbour, etc.). (Amend Urban Renewal (Tax Relief) Act, 1995 and The Industrial Incentives Act, 1956);
- Provide regulations or standards regarding what is considered good agricultural practice *vis-à-vis* harbour pollution by agricultural run-off; and
- Generally improve effectiveness of existing applicable legislation.

7.2.3. Assessment of the KHC Model

Main Advantages. The KHC, as discussed further in Section 7.2.4, meets all but one of the selection criteria (see Section 7.5, Table 7.____).

1. It would be a strong management entity, consistent with the pattern established for or learned from management of other major bays;
2. It would support rather than supplant or duplicate the mandated roles and responsibilities of existing stakeholders;
3. It would have the authority and status to co-ordinate the various actors and activities with respect to the harbour;
4. It would be able to sustain a specific focus on Kingston Harbour rehabilitation and redevelopment, perhaps over several decades;
5. It would be able to ensure that Kingston Harbour's needs do not get lost or subsumed in the morass of an existing entity's extensive remit;
6. It would provide functional permanence/institutional longevity with minimal risk of loss of focus due to changes in leadership;

7. It would minimize vulnerability to inadequate political incumbent interest/effort;
8. It would have permanent conduits and ready channels to all actors at the highest levels of decision making;
9. It would be able to secure funding on a sustained and independent basis;
10. It would be able to engage the private sector, as willing partners in financing and implementing harbour cleanup and waterfront improvement and development or redevelopment;
11. It would be able to take a holistic approach to activities and realities of the hinterland related to the clean-up and management of the harbour; and
12. It would be able to achieve an appropriate balance among competing uses and values of the harbour, its resources and waterfront lands.

Main Disadvantages. The main weakness of the Kingston Harbour Corporation arrangement proposal relate to the need for a new entity, concomitant new legislation and the process of development of a plan to be statutorily delineated.

However, the cost and staff requirements should be considered in the context of this model's potential for realizing the economic/commercial benefits of Harbour cleanup and development or redevelopment.

Except for these, the proposal would appear to meet overwhelmingly the criteria set out and is therefore recommended as the most desirable course to be undertaken.

7.2.4. Reporting Rationale

Questions have been raised about why the Corporation should report to the Prime Minister. The following discussion addresses the rationale.

Reporting directly to the Prime Minister is proposed for the following reasons:

1. This might assist in addressing some of the "turf" issues which may arise in trying to address a matter such as this, where key agencies with statutory mandates concerning the harbour report to different Ministers of Government
2. If the Prime Minister were to consider the project particularly worthy of his blessing and it falling within his personal responsibility, this would be an asset and could give the effort a fillip.
3. Assumption of direct responsibility by the Prime Minister in power could signal (to all sectors of Jamaica, including the business community) a national commitment to, at last, address Kingston Harbour rehabilitation; and

4. The Prime Minister could use his office to better ensure that whatever is required for implementation is carried out.

Lack of 'political will' is often bemoaned but difficult to prescribe for, by way of an institutional arrangement. However, it is clear that the prospects of engendering and nurturing political will are better served by deciding in the first place upon an arrangement entailing 'real commitment'.

Such a course is preferred to proceeding virtually below the radar of public engagement and priority undertakings, on the kind of path already proven to be one from which very little results.

The very act of establishing a new entity is manifesting a commitment to addressing the Kingston Harbour rehabilitation to a greater extent than tacking on the responsibility to the remit of some existing Government agency. In the latter case there is a strong likelihood that Kingston Harbour rehabilitation will get lost in the morass of the agency's remit as it competes with several other items for budgetary allocation.

The Kingston Harbour rehabilitation effort would then continue to languish and be seen as an issue primarily of concern to the environmentalists and the Government and not sufficiently one for the active support and involvement of a business sector, concerned with the "bottom line."

The net result in such a scenario could well be that some years from now that it is said that there were insufficient resources or insufficient interest and effort on the part of the incumbent Minister(s) concerned.

The risk of such an eventuality is minimized by establishing an appropriate entity, specifically dedicated and empowered to champion the rehabilitation effort and related development vision and for which it is custodian and accountable and has to report to parliament periodically.

A precedent for such a special purpose entity was set by **The Black River (Upper Morass) Reclamation Act, 1941** (now repealed), under which the administering body was a statutory corporation with powers, *inter alia*, ... "to keep clean, clear and navigable, the waters of the Black River ...", but exercised jurisdiction in relation to hinterland areas and matters, affecting the exercise of such powers.

For the Corporation to be effective, it must exercise an analogous hinterland jurisdiction.

The Office of National Reconstruction (ONR), established after Hurricane Ivan, in the last quarter of 2004, provides, *ex facie*, another example of an entity, which, except for its ephemera and related features, is roughly analogous to the one being contemplated, to the extent that it was:-

- Involved in a major rehabilitation and redevelopment exercise;

- Engaged in seeking funding;
- Dealing with different governmental and private sector entities and coordinating their inputs; and
- Operating as a supra-governmental agency (government agencies already exist to carry out functions it was mandated to carry out but the ONR operated as such because the rehabilitation effort concerned required focused and sustained effort and was considered to be a matter of much importance and urgency).

It may also be recalled that (as earlier mentioned in Section 5.3.1) the UNDP/GEF Study favoured creation of “a strong management entity” with the singular responsibility of managing Kingston Harbour and guiding its restoration. It is noteworthy that both the UNDP/GEF Study and the current study have examined the issue of appropriate institutional arrangements for Kingston Harbour restoration and, despite differing routes and perspectives, have come to the basic conclusion that creation of a strong institution dedicated to Kingston Harbour management, restoration and development is warranted.

The UNDP/GEF Study proposed transitional arrangements (towards the creation of such an entity) as it was feared then that “the creation of a new institution at this time is unlikely to receive support in a regime of downsizing, re-engineering and contraction of the public service.”

The perennial concern of unduly extending government bureaucracy, out of the need to ensure optimal use of limited resources or of not increasing demands on them, is understandable and unlikely to disappear anytime soon. However, it is also important to think in terms of growing those resources. The vision and implementation of a plan for the harbour and its precincts, for which the new entity would be custodian, provides an opportunity to grow such resources.

The tremendous gains to be expected from anticipated success with such an entity would far exceed the relatively limited costs entailed in its creation and operation. In the final analysis, the decision as to whether or not to create a new entity, as recommended, is dependent on the priority thought fit to be accorded Kingston Harbour rehabilitation. In the Consultants’ view, the rehabilitation deserves to be accorded very high and urgent priority and therewith ‘real commitment’.

7.3. The NEPA/MLE Model (KHMAL)

The second model, diagrammed in Figure 7.2, most nearly replicates the existing situation, placing responsibility with the Ministry of Land and Environment and NEPA. It would consist of a Kingston Harbour Monitoring and Advisory Committee reporting to the Ministry of Land and Environment, with functions carried out by NEPA and a dedicated Project Unit.

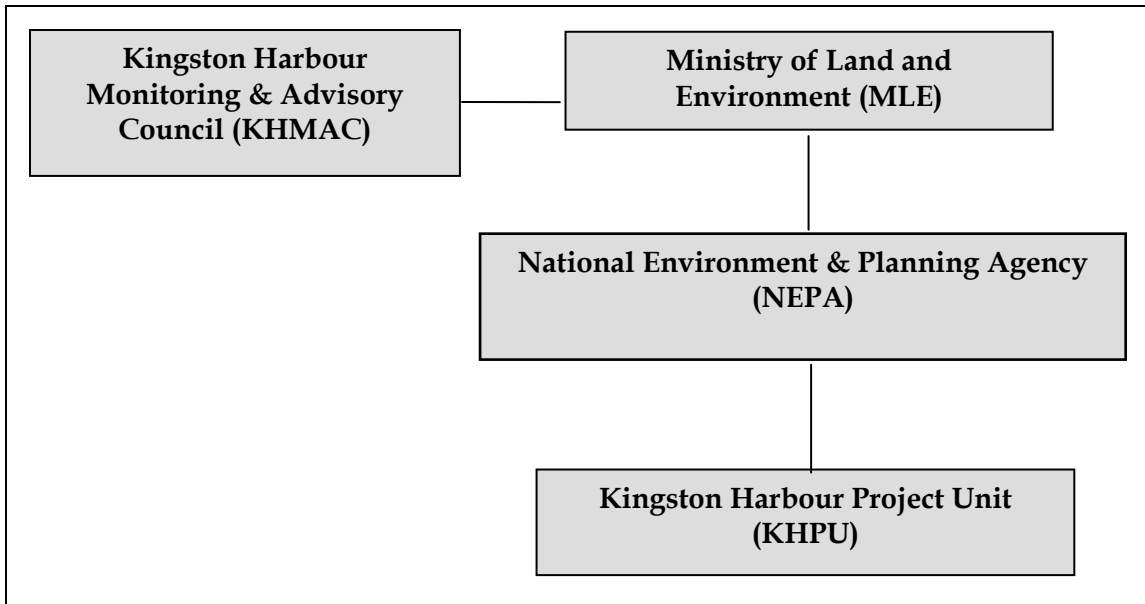


Figure 7.2 Organization Chart for the MLE/NEPA Kingston Harbour Management Model

7.3.1. The Role of the Kingston Harbour Monitoring & Advisory Council (KHMAL)

The KHMAL would be government's highest level policy-making, advisory and monitoring body in regard to the planning and management of Kingston Harbour. It would be chaired by the Minister of Land and Environment or his nominee, who would constitute its membership from amongst the Permanent Secretaries of the relevant government ministries, and top level representatives of the public and private sector bodies whose portfolios/ businesses have significant impact upon the environmental condition of Kingston Harbour, as well as delegates from the major international development agencies, banks, *donor* institutions, NGOs and CBOs.

The fundamental concepts in regard to the role and function of the KHMAL are as follows:

- The KHMAL would be intended to be a permanent body dedicated to ensuring that Kingston Harbour is rehabilitated, utilized, and maintained,

- in an environmentally sustainable manner.
- The KHMALC would be expected to interface with the political directorate and make recommendations to Cabinet whenever Cabinet approvals may be required to clear the way for taking any initiatives, or entering into any Agreements, that may be required for fulfillment of programme objectives.
 - The KHMALC would meet at least twice per year. Special meetings could be called at any time by the Minister.

7.3.2. The Role/ Functions of the Ministry of Land and Environment (MLE)

The role of the MLE in the proposed institutional framework for management of the harbour would be as follows:

- To constitute/appoint/set up the Kingston Harbour monitoring and Advisory Committee, (KHMALC).
- To function as the Secretariat for the KHMALC.
- Make regular reports to Parliament and to civil society concerning the environmental condition and the usage of Kingston Harbour.
- To ensure financial sustainability of the institutional arrangements;
- To assist where necessary in securing funding for projects pertaining to the rehabilitation and sustainable development of the harbour;

7.3.3. The Role/ Functions of the National Environment and Planning Agency (NEPA)

The following is a list of the main functions that NEPA would be expected to perform as the central Executing/Implementing Agency of government in the proposed institutional framework that will be responsible for management of Kingston Harbour.

- Coordinate and assure the performance of planned point-source clean-up projects;
- Encourage integration of cleanup projects with a series of supporting actions;
- Advise on and monitor actions throughout the entire area of influence aimed at curbing non-point sources as well as point sources of pollution;
- Explain and demonstrate the linkages between cleanup and private investment.
- Advise on, monitor and coordinate land use and zoning in and around the harbour;
- Establish and administer a wetlands mitigation bank;
- Promote the greening of waterfront areas and re-planting of mangroves.
- Serve as initiator/ facilitator of trust fund for Kingston Harbour rehabilitation;
- Enter into agreements, memoranda of understanding with

- relevant entities for management of the harbour;
- Maintain a database on the harbour, including its value, water quality and general state as well as other pertinent information;
- Assist in providing expert evidence as regards damage to Kingston Harbour *re* spills in harbour or other pollution incidents;
- Prepare drafting instructions for needed legislative changes for increased harmonization and effectiveness.

7.3.4. The Role/ Function of the Proposed Kingston Harbour Project Unit (KHPU)

The Kingston Harbour Project Unit would be the active day-to-day project management unit within NEPA, comprising technical and administrative personnel whose main responsibilities would be to:

- Formulate, revise and update implementation plans, budgets and programmes for the rehabilitation of Kingston Harbour;
- Interface with relevant government agencies to obtain information on projects which impact on Kingston Harbour, (work plans, budgets, progress reports, etc), and use this information to develop/update strategic plans for the sustainable use and development of the harbour;
- Implement specific strategic projects: Prepare Terms of Reference and contract documents, conduct negotiations for the appointment of consultants, contracts and suppliers, and monitor and supervise delivery of required goods and services
- Facilitate and expedite the concurrence of government and external agencies on all matters relating to the furtherance of Kingston Harbour project objectives

7.3.5. Assessment of the KHMACH Model

Main Advantages

1. It requires minimal new bureaucracy;
2. It incurs minimal new cost;
3. It requires minimal new legislation;
4. It is able to take a holistic view of environmental/developmental issues and balance competing interests;
5. It supports rather than supplants or duplicates the legitimate roles and responsibilities of existing stakeholders; and

6. It has a simple line of authority, to which parties are already accustomed.

Main Disadvantages

1. The Minister of Land & Environment is ultimately responsible. However, key entities such as the Port Authority, the Maritime Authority of Jamaica and the KSAC / St. Catherine Parish Councils are not within his remit. Difficult "turf" issues could arise.
2. There is an absence of a strong management entity (contrary to international experience).
3. There would be an absence of the requisite authority to effectively coordinate all the main actors and activities.
4. The arrangement would be vulnerable to changes in incumbency and its fate subject to interest and effort of the political incumbent (Minister).
5. The arrangement would be unlikely to sustain focus over decades. Both the MLE & NEPA have several areas of responsibility competing for attention and budgetary allocation.
6. The arrangement does not provide for a dedicated champion with focused-responsibility for Kingston Harbour.
7. The arrangement reinforces and encourages the perception that Kingston Harbour rehabilitation is matter of interest solely for the environmentalists and government agencies.
8. A government focus may not be able to sufficiently engage the interest of the business sector.
9. Private Sector interest is unlikely to be kindled by this arrangement and lack of development vision.
10. The KHMAL would be merely advisory and by its nature, a weak entity, with no power vis-à-vis stakeholder government agencies.
11. What are indicated as possible duties of the KHMAL, such as regular reporting and ensuring financial sustainability, are more in the nature of promised undertakings. There is no clear public commitment to do anything, no clear statutory obligation to a plan binding on stakeholders and therefore no accountability for promises not kept.

7.4. *The National Ocean and Coastal Zone Management Council (NCOCZM)*

One school of thought is that since the NCOCZM already has most of the relevant decision makers operating in a forum dealing with coastal zone issues, consideration should be given to that body being the institution to be in charge of the rehabilitation of Kingston Harbour (see structure in Figure 7.3). The argument is that the body already exists, albeit without any statutory buttress, structured as shown in Figure 7.3. Moreover, as the top-level functionaries on the NCOCZM are likely to be the same set on any new body, they should not be subjected to another set of meetings which could be addressed in that forum. The Council's background, terms of reference, operation and related issues have been considered earlier (in Section 5.3.3).

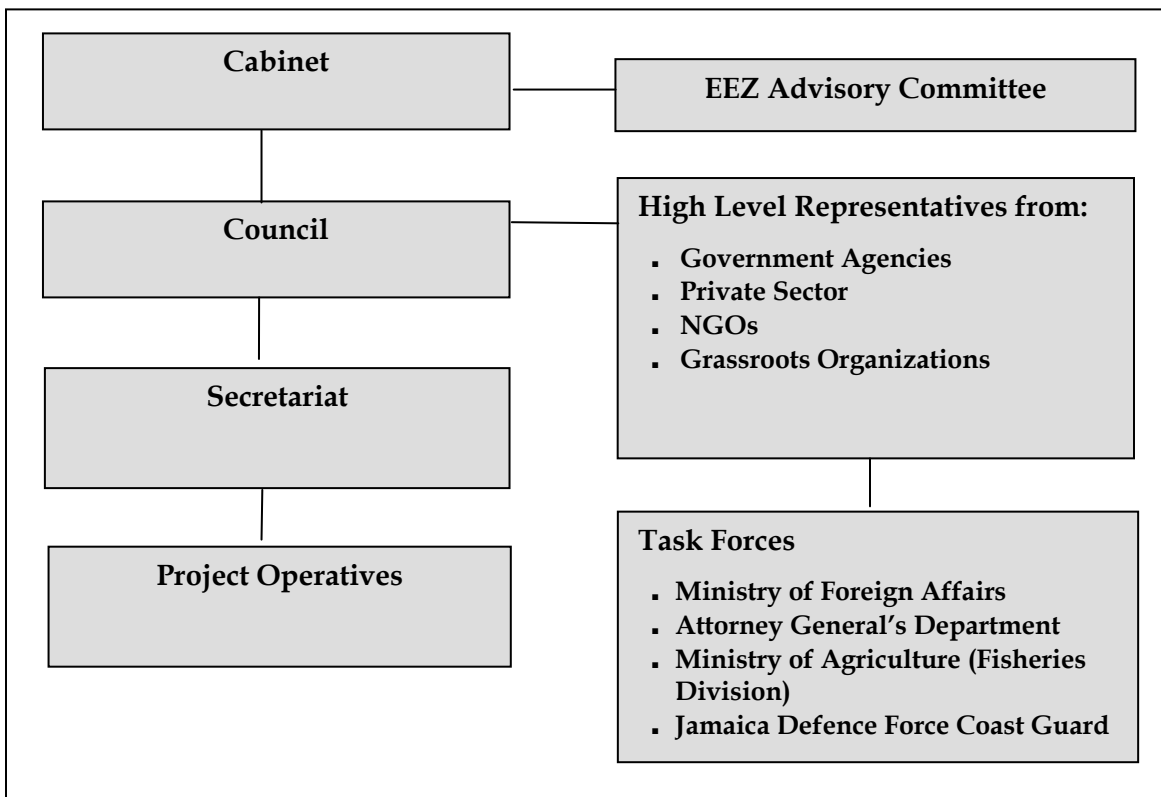


Figure 7.3 Organization Chart for the NCOCZM Model

7.4.2. Assessment of the NCOCZM

Main Advantages

1. Council already exists, albeit without statutory buttress, and entails minimal new bureaucracy

2. Council already exists and expansion of role would support rather than supplant or duplicate the mandated roles and responsibilities of existing stakeholders' roles;
3. Since the membership of the Council is (or has been) comprised of busy top-level heads of stakeholder organizations, who would likely be the same set sought to comprise any new entity, utilizing the Council obviates the need to add to the demands on such persons;
4. Council has links to highest decision makers, as it is conceived to report directly to Cabinet, bi-annually;
5. Council provides forum with potential for co-ordination of actors;
6. Council has potential to take holistic and systematic approach, given the breadth of its focus and wide-ranging stakeholder representation.

Main Disadvantages

1. Council is merely an advisory body;
2. Council does not have jurisdiction to compel stakeholder entities to act;
3. Council is not buttressed by statute. Its role, functions and jurisdiction are not statutorily delineated;
4. Council's basic focus is not on Kingston Harbour per se but on Jamaica's entire coastal zone and capacious marine area over which Jamaica exercises jurisdiction. Kingston Harbour is only a small, albeit important subject for consideration in its wide remit;
5. Council not set up or conceived to engage private sector in manner needed;
6. Council would find it particularly challenging to secure funding on a sustained basis;
7. Council does not have statutory authority to balance competing interests;
8. While Council provides forum for taking a holistic and systematic approach, it lacks the requisite authority to compel such an approach;
9. With the Council's authority currently based on a Cabinet decision, its functional permanence is not sufficiently guaranteed with changes in political incumbency;
10. Council does not provide dedicated empowered champion of Kingston Harbour cause;

11. With Council, Kingston Harbour rehabilitation is more vulnerable to insufficient political incumbent interest & effort.

7.5. Summary Model Comparison

	KHC	NEPA/MLE	NCOCZM
1. Be a strong management entity, consistent with the pattern established for or learned from management of other major bays;	✓		
2. Support rather than supplant or duplicate the mandated roles and responsibilities of existing stakeholders;	✓	✓	✓
3. Have the authority and status to co-ordinate the various actors and activities with respect to the harbour;	✓		
4. Be able to sustain a specific focus on Kingston Harbour rehabilitation and redevelopment, perhaps over several decades;	✓		
5. Be able to ensure that Kingston Harbour's needs do not get lost or subsumed in the morass of an existing entity's extensive remit;	✓		
6. Provide functional permanence/ institutional longevity with minimal risk of loss of focus due to changes in leadership;	✓		
7. Minimize vulnerability to inadequate political incumbent interest/effort;	✓		
8. Have permanent conduits and ready channels to all actors at the highest levels of decision making;	✓		✓
9. Be able to secure funding on a sustained and independent basis;	✓		
10. Be able to engage the private sector, as willing partners in financing and implementing harbour cleanup and waterfront improvement and development or redevelopment;	✓		
11. Be able to take a holistic approach to activities and realities of the hinterland related to the clean-up and management of the harbour;	✓	✓	✓
12. Be able to achieve an appropriate balance among competing uses and values of the harbour, its resources and waterfront lands; and	✓	✓	✓
13. Require the least new cost, bureaucracy and legislation consistent with meeting the criteria listed above, in consideration of resource constraints.		✓	✓

8. Implementation Plan

This section sets forth, in outline, the steps needed to implement the recommended institutional arrangement for rehabilitation and conservation of the Harbour – the proposed Kingston Harbour Corporation.

8.1. Steps to Establish the KHC

- Obtain final consensus on the KHC as the preferred institutional model. This may require presentations to the political directorate and other stakeholders.
- Prepare drafting instructions for the legislation required to establish the KHC, its purpose and mandate, structure and composition, core and support functions, reporting requirements, etc.

8.2. Steps to Clarify and Improve the Legislative Framework

- Rationalize and clarify responsibilities of various governmental agencies as regards particular pollution sources, including:
 - Sewage collection and treatment, especially the role of the NWC, government developers exempted from particular legislative controls re provision of sewerage facilities in schemes;
 - Cleaning of gullies; and
 - Provision of sea defenses, for which there is no government agency specifically mandated with overall or residual responsibility.
- Enact legislation to address liability and compensation for pollution of Kingston Harbour from ship-source pollution (to provide protection in the event of a major/significant spillage of oil or other polluting substance and widen what can be claimed for in court, in the event of such spillage);
- Amend the Urban Renewal (Tax Relief) Act, 1995 and the Industrial Incentives Act, 1956 to provide incentives for utilization of EMSs (for entities on the rim of the harbour, etc.);
- Rationalize trade effluent monitoring and reporting requirements (Draft Deliverable B4);
- Promulgate the Wastewater and Sludge Regulations;

- Generally improve effectiveness of existing applicable legislation; and
- Provide regulations or standards regarding what is considered good agricultural practice *vis-à-vis* harbour pollution by agricultural run-off.

8.3. Steps to Define Roles and Responsibilities

8.3.1. Kingston Harbour Corporation Board

- Further define the core and support roles and responsibilities listed in Section 6.4, with special emphasis on the implementation of the major rehabilitation concepts: water quality management and environmental remediation, and use and zoning of harbour waters and shorefront lands. Identify critical interactions between the lead and supporting organizations and the manner in which the KHC would advise on and review functions, projects and services carried out by existing agencies.
- Establish a Nominating Committee within the Kingston Harbour Steering Committee to solicit, receive and agree on nominations to the KHC Board.
- Define the functions of a Private Sector Trust as a mechanism for fund raising and attracting private sector and general public support.

8.3.2. The Secretariat

- Recruit personnel from the current Kingston Harbour Project Unit and second personnel from other government entities.
- Initiate proposal-writing and fund-raising activities.
- Initiate preparation of Kingston Harbour Plan (see Section 8.4).
- Undertake orientation and priority-setting sessions with the new Board.
- Advise the KHC Board on actions required to orchestrate cleanup actions already under way or committed (see Table 7.1).

8.3.3. The Private Sector Trust

- Establish the Kingston Harbour Trust as a non-profit (tax-exempt) company, limited by guarantee, involving the business sector, donor entities, environmentalists/scientists, community-based organizations, concerned citizens and other members of civil society, with a Board of Directors composition reflecting such involvement and requisite public

relations fund-raising, accounting, marketing/public relations and legal expertise.

8.4. Steps to Prepare a Kingston Harbour Plan

8.4.1. Plan Component 1: Water Quality Management

(To be incorporated when completed)

8.4.2. Plan Component 2: Environmental Remediation

- Encourage all industries discharging trade effluent to Kingston harbour to use EMS systems and the Wastewater and Sludge Regulations, when finalized, to guide decisions on plans for plant upgrades or cleaner production processes to reduce the trade effluent loading.
- Follow up on the recommendation that NEPA require all facilities that are not connected to the sewer system when the regulations take effect to meet Trade Effluent Standards.
- Select an operational option and bring to market a NEPA Revolving Fund that industries will be able to use to reduce the pollution load discharged to the harbour (Draft Deliverable B4).
- Hire and/or train staff in the requisite financial, monitoring and enforcement skills (Draft Deliverable B4) or consider placing the operation of the Fund within the KHC Secretariat.

8.4.3. Plan Component 3: Use and Zoning of Harbour Waters and Shorefront Lands

- Prepare a complete and accurate cadastral map of the harbour/harbourfront lands.
- Complete the draft Kingston Harbour Plan, building on:
 - the recommendations of Deliverable A4;
 - the recommendations of KSAC and its final Sustainable Development Plan; and
 - the completed cadastral map.
- Develop a Kingston harbour website.
- Publish and publicize the draft plan and provide a variety of opportunities for comment.

- Adopt the final plan as a statutorily delineated element--the pivotal frame of reference defining the Corporation's geographical reach and power to act--under the new KHC legislation;
- Establish procedures for periodic plan revision, with the participation of the stakeholders.

8.4.4. Plan Component 4: Use and Zoning of the Harbor Hinterlands

As part of the Kingston Harbour Plan, develop a program for stimulating and monitoring progress towards the integrated land and water management recommendations of the KSAC Sustainable Development Plan, by:

- Promoting adoption of similar recommendations by neighboring municipalities;
- Requiring regular reports from relevant entities to the KHC Board;
- Supporting actions leading to implementation of the six-step integrated plan for urban watershed management prepared as a part of the KSAC Sustainable Development Plan; and
- Making periodic presentations at meetings of implementing entities and influential stakeholder groups.

**KINGSTON HARBOUR REHABILITATION PROJECT - COMPONENT A
INSTITUTIONAL & LEGAL FRAMEWORK (FINAL DRAFT)**

Action Area	Responsible Entity(s)	Short Term (1-5yrs)	Medium Term (5-15yrs)	Long Term (beyond 15yrs)	Cost				Progress
					US\$M				
Source of Degradation					S	M	L	TOTAL	
Sewage	NWC	Construction of a 30mgd AIPS at Soapberry, and transmission of flows from Western, Greenwich, Independence City and Bridgeport, into the new facilities at Soapberry.	Provision of tertiary treatment facilities at Soapberry for 30mgd, and sewerage of some additional high density areas of KMA.	Construction further 25mgd AIPS modules at Soapberry, with tertiary facilities, and completion of sewerage of KMA.	55	58	50.6	163.6	In 1999, 4 STPs (Greenwich, Nanse Pen, Independence City, Harbour View) partially rehabilitated for J\$83M
Sedimentation	Ministry of Transport & Works	Major dredging program inside the [Hunt's Bay to restore sufficient holding capacity to obviate the need for further dredging for another 15-20 years.			34		(34)	34 (34)	Gully & drain cleaning started in several parts of Kingston esp. in Sandy Gully. PA has dredged harbor, dumped spoils in Hunts Bay.
	NRCA /NEPA	Carry out the proposed Rio Cobre Watershed Action Plan.			0.3				Efforts are focused on Rio Grande and Great River watersheds, the 2 sites for a major watershed project.
Solid Waste	MLG	Commence the proposed Solid Waste Management programme			0.4				In progress.; better collection of garbage and upgrading of Riverton City dump to a sanitary landfill
Ship waste	SAJ	Treatment facility for solid and oily wastes. Preferred site 2 ha at Greenwich (no space at Gordon Cay, Newport East, Soapberry).			0.993 construction 1.127 p/a operating				
Industrial Waste									
Agricultural Runoff									

KINGSTON HARBOUR REHABILITATION PROJECT - COMPONENT A
INSTITUTIONAL & LEGAL FRAMEWORK (FINAL DRAFT)

Action Area	Responsible Entity(s)	Short Term (1-5yrs)	Medium Term (5-15yrs)	Long Term (beyond 15yrs)	Cost				Progress
					US\$M				
					S	M	L	TOTAL	
Source Degradation of									
Legislative Framework									
Management Framework									
Capacity Building of Existing Institutions								5.8	
Public Education		Carry out the proposed Public Education programme.						4.5	
					TOTAL INVESTMENT REQUIRED US\$			211.6	

Individuals and Organizations Consulted

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2. Errol Greene, former Town Clerk - KSAC & CEO, Kingston City Centre Improvement Company (KCCIC);
3. Gawayne Forbes, Legal Officer - NWC;
4. Laleta Davis-Mattis, Legal Officer - NEPA;
5. Kerry-Ann Mason, Legal Officer NSWMA;
6. Donna Samuels, Legal Officer - UDC;
7. Paulette Kolbusch, NEPA;
8. Claire Bellamy, Legal Officer, Ministry of Health;
9. Morin Seymour, CEO - Kingston Restoration Company Limited;
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11. Peter Brady, CEO - Maritime Authority;
12. Bertrand Smith, Legal Officer, Maritime Authority;
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16. Gladstone Ivey, Petrojam
17. Karlene Russell, Petrojam
18. Winston Watson, Petrojam
19. Mayor Desmond McKenzie, KSAC
20. Councillor Lee Clarke, KSAC
21. Thelma Levy, KSAC
22. Jackie Stephens, KSA PDC
23. Errol Greene, KCCIC
24. Victor Cummings MP
25. Ronnie Thwaites MP
26. Penelope Buddhall, Consultant, Component B

Appendices

Appendix 1

Case Studies

CASE I

CHESAPEAKE'S VALUE WORTH MORE THAN THE SUM OF ITS PARTS

Two seemingly unrelated events are scheduled for October. One of them will be the completion of the Blue Ribbon Finance Panel's Final Report on how to fund the cleanup of the Chesapeake Bay. The other is a national conference on "*Valuation of Ecological Benefits*" which will take place in Washington, D.C. The convergence of the two events has me thinking about costs and values.

The Blue Ribbon Panel has been working for months on how to assess the costs of restoring the Bay's water quality and the even more daunting task of figuring out how to pay for that effort. For example, streamside forest buffers are relatively cheap to install and extremely effective at soaking up excess nutrients and sediment. Should the costs of the trees be counted as a capital investment and amortized over the life of the buffer, say 50 years, or should all of those costs be counted in the first year? The Blue Ribbon Panel has done an extraordinary job of sorting through all of the numbers, and its recommendations on how to finance the restoration of water quality in the Chesapeake Bay are certain to be impressive. The costs will be huge, and the recommendations are certain to spark a vigorous and much-needed discussion about how we finance the Bay's restoration.

But all this talk of costs immediately raises the question: What is the value of a clean Bay? It is a simple question without a simple answer. Even in its currently stressed condition, the Bay is a powerful economic engine. For example, in a 1997 book, David Kerstetter and James Kirkley estimated that Virginia's recreational saltwater anglers spent \$303 million and generated \$477.2 million for the commonwealth's economy in 1994. The numbers from Pennsylvania are equally impressive. Fishing activities statewide generate \$4.7 billion a year in revenue, resulting in 43,000 jobs outfitting, feeding, lodging and guiding anglers. The booming recreational boating industry continues to skyrocket in value.

Birders flock to the wetlands and forests of the Bay watershed, spending millions of dollars on equipment, meals and tours. In fact, nature-related recreation is the fastest growing part of the tourism industry nationally.

The real estate value of properties that border the Chesapeake Bay and its tributaries is astonishing, as anyone who has dreamed of buying a retirement home along the water can attest.

When the old Baltimore Chromium Works was cleaned up, the formerly polluted site went from being an economic sore on Baltimore's Middle Harbor to a magnet for a multimillion dollar office-technology-retail redevelopment project that is expected to create 36,700 permanent jobs and include 11 acres of open space and a waterfront park.

Similarly, District of Columbia Mayor Anthony Williams' ambitious Anacostia Waterfront Initiative envisions more than 100 acres of new parks, 20,000 residential housing units, 1 million square feet of retail development and 20 million square feet of commercial office space. Over the next 25 years, the plan could generate \$4 billion in private investment for the district. And all of it is contingent on the accelerated restoration of the Anacostia.

The only comprehensive look at the economic value of the Bay that I'm aware of was conducted by University of Maryland economists 15 years ago. Their best estimate of the value of the Bay was \$678 billion. Some analysts today suggest that inflation alone would push the cumulative value of the Bay to more than a trillion dollars. As impressive as those numbers are, they still don't fully capture the economic value of the Bay.

In the last several years, economists have begun to look at the monetary value that society gains from the ecological functions of healthy ecosystems. For example, we now realize that wetlands provide many benefits to society, including filtering sediments and capturing nutrients from adjacent lands, blocking pollutants from fouling the Bay's open waters. What would it cost to build conventional treatment plants, flood control systems and aquaculture nurseries to provide the same benefits that our natural wetlands provide for free?

As we look at the studies already conducted, we can say with some confidence that the economic value of the Chesapeake Bay will dwarf the costs of restoration. But I believe that a strict look at the balance sheet would still greatly undervalue the Bay. The Chesapeake has rightly been called a “national treasure” and an “ecological resource of international significance.” Those lofty terms can’t be defined by dollars alone. As part of our history and culture, the Chesapeake Bay is one of those rare jewels that really does qualify as priceless. Equally priceless is the aesthetic and emotional value of this magnificent resource.

Certainly we should continue to make sure that we fully understand the costs of the Bay’s cleanup and the real economic benefits associated with that effort. I am certain that the numbers will prove that the cleanup is a smart economic investment. I am reminded of Oscar Wilde’s famous observation that we must be careful not to be the person “who knows the cost of everything but the value of nothing.” Because the ultimate value of a restored Chesapeake will not be found by looking at a spreadsheet, but rather through our senses as we experience the Bay’s bounty, our minds as we remember our shared history, and our hearts as we appreciate its wonder.

Rebecca Hammer, director of the EPA’s Chesapeake Bay Program Office, October 2004

CASE II A

HISTORY OF BALTIMORE INNER HARBOR

The port of Baltimore was founded in 1729 by the Barons Baltimore, and in the early years was known for the exportation of tobacco. Later the port would export wheat to the Caribbean and Europe and in the 19th century iron and copper smelting were added to its functions. Up to World War II, when Baltimore was at its height as a major industrial port, steel works and oil refining had become essential to the city's economy.

After World War II downtown Baltimore began a downward spiral. Most of the commercial ships and steamers had moved to other ports. The inner harbor was run-down, warehouses were abandoned, and street deserted. Employers had moved their businesses away from the downtown area, property assessments were falling and vacancy rates were at an all time high.

In the mid 1950s, ... two groups, the Committee for Downtown and the Greater Baltimore Committee, were formed by businessmen who agreed that downtown renewal had to become a priority. In 1956 the Greater Baltimore Committee created the Planning Council to address redevelopment issues. With money provided by both the Committee for Downtown and the Greater Baltimore Committee, the Planning Council was commissioned to prepare a master plan for the downtown area.

Development took place over several years:

1959 The Urban Renewal Plan for the Charles Center was announced and approved by City Council. The approval of the Plan effectively made partners of the city government and the downtown business community.

1960 The Charles Center Management Office was established. Through this management office the City could combine the flexibility of a private corporation with the City's powers to raise working capital and assemble land through eminent domain.

1964 At the urging of Mayor McKeldin, Jr., the Planning Council was asked to prepare a conceptual plan. The revitalization plan called for a thirty-year, \$260 million program to be built along the inner harbor. The Plan consisted of several components:

1. Reconstruction of the Municipal Center.
2. Extending the Charles Center toward the Inner Harbor.
3. Building high and low-rise housing.
4. Opening up the shoreline of the inner harbor to the public.

Although not seen as a priority in the past, public access to the waterfront was now seen as an important component to the revitalization of the Inner Harbor. The Plan included setting aside land along the shoreline for public use. This included building walkways from downtown office buildings to the waterfront; constructing a promenade along the waterfront; building recreation areas, parks, and gathering spots for the public to enjoy.

1965 The Charles Center--Inner Harbor Management, Inc., a non-profit organization, was formed to implement the Inner Harbor Plan. The city was fortunate in receiving a voter approved loan of \$12 million to jump start implementation of the plan. However, it was the \$22.4 million federal grant which allowed the city to move forward with land purchases and the clearing out of the warehouse district.

And so began the process of bringing Baltimore back to life. As the city began to see changes to its shoreline, a growing sense of pride began to emerge. Sensing a renewed interest in the waterfront the city began sponsoring special events to bring people downtown.

In the 1970s the government began cutting back on redevelopment grants and the City had to consider alternative sources of income to continuing the redevelopment process. Tourism and tourist attractions were seen as one possible answer.

Between 1977 and 1981 the city planned four significant projects in hopes of attracting visitors to the Inner Harbor in numbers great enough to elevate the Baltimore waterfront to that of a major tourist destination.

1979 The Baltimore Convention Center was opened. \$35 million in funding came from the state legislature after a feasibility study revealed that a convention center would greatly benefit the state of Maryland as well as the City of Baltimore.

1980 Harborplace, a Rouse Company property, opened. Located on the promenade of the Inner Harbor, Harborplace provided the shopping component of the plan in the form of two pavilions of shops and restaurants. It is reported there were 18 million visits to the shops and restaurants in its first year of operation.

1981 The National Aquarium of Baltimore opened at a cost of \$21 million funded by the City Council. The Aquarium receives more than 1 million visitors annually.

1981 The Hyatt Hotel--Inner Harbor opens. The fourth component of the plan was constructing a hotel to make the Convention Center more attractive to conventions. As it turned out, it was no easy feat convincing a major hotel chain to build along the Inner Harbor. In fact, after two failed attempts with other chains, the city had to obtain a \$10 million federal Urban Development Action grant, plus provide another \$2 million to make a package attractive enough for the Hyatt Regency to build.

Although it took more than 25 years, Baltimore was able to turn its blighted waterfront into one of the most sought after waterfront destinations in the country. The partnership of business community and local government has allowed this community to do what few other cities have been able to accomplish. In the 1990s Baltimore continues to be a model of success to other cities considering waterfront redevelopment.

Sources: *The Baltimore Harbor*, Baltimore City, Maryland; Department of Planning; Prepared under the management of David Carroll, Chief, Coastal Resources Planning Section.

CASE II B

BALTIMORE INNER HARBOUR MANAGEMENT STRUCTURE*

[The Charles Center--Inner Harbor Management, Inc.], although a legally constituted non-profit corporation and not a city agency or department with operational responsibilities, was arguably part of the city government. Its funding was derived from city funding, its budget was included within the city budget under the Urban Renewal and Housing Commission, and it advised on policy but did not set policy. It negotiated but did not have power to enter into contracts with builders, developers, or designers but it did exercise singular authority on issues pertaining to those projects. All government employees, private sector developers and contractors, and citizens clearly knew that issues pertaining to significant urban renewal projects were to be directed to Charles Center-Inner Harbor Management, Inc.

At its peak, Charles Center-Inner Harbor Management, Inc. had an annual operating budget of \$1 million. Its contract with the city provided that city government would advance a revolving fund, from which the corporation would pay its expenses including salaries, rent, supplies, travel, etc. and submit records from which it would be reimbursed by the city on a monthly basis. This quasi-governmental entity enjoyed significant power as its work was directed over city owned land as a result of the passage of the Inner Harbor Project I Renewal Plan. This plan authorized the acquisition of significant property (in excess of 240 acres) on the shores of the harbor waterfront through either direct purchase or eminent domain. Furthermore, the corporation was charged with the authority to direct the Charles Center and Inner Harbor projects through the terms of its contract with the Mayor and the City of Baltimore. The city government, through the Mayor and Urban Renewal and Housing Commissioner (later the Commissioner of Housing and Community Development) established policies under which the corporation would conduct its activities. Any and all reporting of this activity was directed to the Mayor through the Commissioner of Housing and Community Development. This contract, and the powers contained therein, significantly empowered the entity and provided a clear and an unmistakable signal to the private and public sector of the significant role of Charles Center-Inner Harbor Management, Inc.

In the late 1980s/early 1990s, Charles Center-Inner Harbor Management, Inc., Howard Street Market Place and the Baltimore Economic Development Corporation were folded into a new quasi-public non-profit corporate entity known as the Baltimore Development Corporation. This merger of organizations, along with the fiscal challenges brought about by the recession in early 1990s and the need to create cost-saving measures within city government, brought about a lack of focus and attention to the day-to-day management, maintenance, and operation of the Inner Harbor.

In 2003**, approaching four decades after the city devised a roadmap to transform the rat-infested, industrial Inner Harbor into Baltimore's recreation room, the famed waterfront is at another turning point.

The extraordinary success of the original plan, which draws millions to the harbor each year, has produced a new set of traffic and green space problems that Baltimore planners and developers are hoping to fix with a new master plan.

The original model called for a big shoreline park surrounded by housing and offices. But it became outdated as development boomed and the unforeseen number of visitors flooded the harbor-side promenade.

The new plan seeks to create more pedestrian-friendly links between the harbor and the city, organize what has become a mish-mash of green space and, in the boldest recommendation, dismantle the automobile-centric thoroughways that ring the harbor.



* , ** Harbor Plan to Limit Traffic, Meredith Cohn, *Baltimore Sun*, August 10, 2003

CASE II C

MANAGING BALTIMORE'S INNER HARBOR OPERATIONS: The Need for Direct Day-to-Day Authority and Empowerment

ANALYSIS OF CURRENT HARBOR MANAGEMENT OPERATIONS

To address the lack of a manager of harbor operations, the duplication and shared responsibilities of city agencies on harbor issues, and the importance of establishing lines of communication and cooperation, an Inner Harbor Task Force was created. The task force, chaired by the Director of Public Works, is comprised of representatives from various city departments/agencies who were appointed to serve as a coordinating counsel for marine and land-based issues in the Inner Harbor. The current functions of the Inner Harbor Task Force are three-fold: (1) operational/planning, (2) reviewing of new proposals, and (3) addressing stakeholder concerns.

The task force has no formal policy or guidelines in reference to its decision making, has no specific powers and duties, no staff, no standards for decision-making, hears only those selected issues that are brought to the group from various sources, meets on the average of once per month and is unclear as to what influence or decision making power it has over issues presented to them. Primarily, the Inner Harbor Task Force shares information, and coordinates the shared responsibilities within city government. It has little authority to implement or direct activities.

Despite the existence of the task force, no singular focus exists on harbor issues, as each member has much broader responsibilities in the city government. With no staff, no standards for decision making, no clearly defined responsibilities and no authority, real or apparent, there is little improvement over management and maintenance of the Inner Harbor than had previously existed following the merger of Charles Center-Inner Harbor Management, Inc. into the Baltimore Development Corporation.

It should be noted that the existence of the Inner Harbor Task Force has served to emphasize the intermingling of governmental functions pertaining to the harbor and highlighted a significant need to provide authority and empowerment to a single entity. However, despite the recognition of the lack of authority and empowerment to a single entity, the Inner Harbor Task Force has done little, if anything, to advance that notion to appropriate city officials thereby relegating the day-to-day operations of the Inner Harbor to a bureaucratic abyss.

The Inner Harbor Task Force is an inadequate and ineffective management structure to operate day-to-day oversight and supervision of a world-class waterfront attraction and asset. Unfortunately, it represents the only loosely assembled group of city officials who give direct, although irregular focus, attention, or vision regarding harbor operations. The task force has not been provided, under executive order or mandates, the specific authority or empowerment for day-to-day management decisions or the power to direct city agencies or employees to take action, nor is it constituted to execute such authority should it be given.

There remains no clear authority as to the proper contact person or city representative to deal with developers or users or who has the overall responsibility of issues pertaining to harbor management and operation. There remains no coordinated effort to integrate marine activities with land-based activities or to address relationship of the management and operation of those two separate but related harbor activities.

Finally, no leader has been identified or appointed with the authority to coalesce and direct the many moving parts of city government and the shared responsibilities of city agencies. This ineffective management structure is analogous to a ship with a large crew but absent a captain or rudder to provide direction.

RECOMMENDATION

In considering all of the alternatives that have been posed for managing and operating of the harbor, it is our consensus that the best approach is the creation of a not-for profit quasi-governmental entity similar in structure to the Charles Center-Inner Harbor Management, Inc.

The advantages to this approach over the current operation are many, but most importantly, its structure matches the critical needs for an effective harbor management structure: an entity with a singular focus and with the appropriate government empowerment to act.

The creation of a separate not-for-profit quasi-governmental entity is not a novel one for the city. As stated, the original Charles Center-Inner Harbor Management, Inc. was created over 30 years ago and the lessons learned from its effective operation in the initial development and management of Charles Center and the Inner Harbor can still serve as a guide. In recent months, the creation of the East Baltimore Development Corporation demonstrates the city's recognition of the need and importance of creating an independent body to focus attention to its most critical economic development initiatives. The management of the Inner Harbor is no less significant or important to the future economic health of the city.

The GBC recognizes that some detractors may raise objection to the creation of multiple quasi-governmental agencies being established separate and apart from city government. The GBC discounts those concerns and emphasizes that the size of city government and the multitude of problems confronting government leaders requires that the appropriate special attention be afforded to those successful components of economic development that are essential to the improved vitality of the city and that provide the needed financial resources to meet the ever-growing demands on city government.

Further, the creation of a quasi-governmental entity operated by an Executive Director, with appropriate oversight from a small independent board separate and apart from city government, helps to eliminate many of the bureaucratic challenges and intra-governmental department squabbles that can stymie swift and effective decision-making. Equally important, the separation of this body from the halls of city government helps to isolate the decision-making process from the threat of political pressure and influence. However, the appropriate empowerment from the mayor is critical as no structure or entity, however creative, can be created that will effectively address the operation and management of the harbor without the mayor's attention, focus, and demand for accountability.

For those reasons and others identified in this report, the GBC strongly recommends the creation of a not-for-profit quasi-governmental agency as the preferred choice of management structure to provide the needed oversight, supervision, and day-to-day operational direction needed to preserve the beauty of the harbor area and to fully develop its still unmet potential for economic development and tourism attraction.

Report from the Greater Baltimore Committee's Inner Harbor Management Task Force, October 2003

www.gbc.org/reports/innerharbor.html

CASE III

AMSTERDAM'S WATERFRONT REDEVELOPMENT EXPERIENCE

Planning and Development Policies in the Netherlands

The Netherlands has a well-known tradition of strong national planning and development, precipitated by the housing shortage since World War II. The notion of limited space drives the country's development policies and its commitment to preserving green and agricultural areas between cities. Housing, infrastructure, retail and office development, environmental protection, agriculture, water management and open space are major concerns at both the national and local levels. With two-thirds of their country below sea level, the Dutch have always pursued new ways of relating to water. National planning policies thus concentrate on facilitating growth in designated areas, controlling urban sprawl and reorganizing inner cities without neglecting major infrastructure and the management and control of green spaces and water bodies.

The Dutch rediscovered the importance of their cities in the 1980s after the rapid growth of suburbs and new towns caused increasing congestion and a lack of livable spaces. The idea of a "compact city" was adopted in the nation's Fourth Memorandum of Urban Planning (1988), advocating concentration on the urban nexus in order to "redevelop currently abandoned areas." The compact city concept was broadened in the 1990s with the notion of the "complete city," marrying concepts of multiple and intensive land use with the concentration of functions and activities in a melting pot of lifestyles.

Waterfront Redevelopment in Amsterdam

Amsterdam is a city founded on water and in the seventeenth century was the world's most prominent commercial and maritime center. It is still the cultural and financial capital of the Netherlands and has close to 750,000 inhabitants, 375,000 housing units and 417,000 jobs. The inner city adjacent to the old port areas remains the region's largest center for retail, culture and entertainment and is well suited for pedestrians, bicyclists and public transportation. It is also one of the world's largest conserved historic city centers – a World Heritage Site – and its canals and architecture draw millions of tourists every year.

The relationship between the city and its waterfront has not always been organic; mistakes have been made, such as the 1898 decision to build Amsterdam's central railway station in the middle of the port area. In the past 40 years, large financial institutions have sought more lack of space and accessibility outside the center, while most port functions have moved closer to the sea to handle container ships, while. Although the port continues to play an important economic role for Amsterdam, the city essentially turned its back to the harbor for many years.

Following years of negotiations between the municipality, developers and well-organized community groups, major areas of Amsterdam are now being converted and rehabilitated, while entirely new areas are being built on artificial islands (an overspill area in IJsselmeer Lake will accommodate 45,000 new inhabitants).

The plan, now in the final phase of construction, proposed a series of high-density, moderate-rise communities on the water, thus remaking a historic and cultural bond with the water. Housing is the major component of all new development and 40 percent of it is affordable. The city's waterfront system of old piers and wet docks is becoming an attractive residential and mixed-use district with retail and cultural centers, new transit, parks and waterfront promenades, most of which mix contemporary design with the historic maritime character.



Amsterdam's Borneo Spoorenburg includes rowhouses along piers and won Harvard's Veronica Rudge gree Prize for contributing to the public realm and urban life (Adriaan Greuze, architect)

The Evolution of the Plan

Discussion about the redevelopment of the waterfront began in the early 1980s and led to a design competition in 1984. Initially the city government endorsed the IJ master plan by Rem Koolhaas for the entire 10 km southern waterfront. The redevelopment program incorporated a range of uses, but focused on office development and supporting amenities, aiming to stop the exodus of corporations and finance proposed infrastructure improvements. The plan was to be implemented by the Amsterdam Waterfront Finance Company (AWF), a public private partnership of the city and one master developer/investor with unprecedented authority. Subsequent controversy over the size and cost of the plan, the collapse of the office market in the late 1980s, and growing discontent with the plan among the city's prominent civic and community groups led to the dismantling of the partnership in 1994.

The city then changed its approach and passed a strategic memorandum titled "Anchors of the IJ" in 1995. This plan proposed to build on the existing island structure with a phased development working inwards from the outer edges. This pragmatic and organic approach concentrated the city's efforts and resources on master plans for smaller and more manageable areas. The development program shifted toward housing, anchored by public buildings and squares at strategic locations, within a framework of larger infrastructure investments. The national government committed to building a new tunnel and a light rail system. Urban design and development programs were determined by site potential and strong community input and were modified over time based on experience, new ideas and changing market conditions. Since the city owns the land and thus controls how much land is available for development, it encouraged private developers to team up with nonprofit housing groups to bid for portions of the waterfront. The Amsterdam case underscores the need for strategy, planning tools, leadership, partners and community input in redevelopment that benefits the community at large.

CASE IV A

A BALANCED PLAN FOR BOSTON'S WATERFRONT

Copyright 1998 Globe Newspaper Company
The Boston Globe, Saturday, July 11, 1998
By THOMAS N. O'BRIEN, Director of the Boston Redevelopment Authority.

This is a unique time in the history of Boston, as the depression of the Central Artery, the cleanup of Boston Harbor, and the infrastructure investments in the South Boston Seaport District are reconnecting our citizens to the waterfront. During this time of incredible opportunity, we must remember that growth in urban centers comes over decades, and our work on the waterfront will take the next 30 years, the next four or five economic cycles.

Mayor Menino has charged the Boston Redevelopment Authority to be balanced as we regulate the investor appetite for the seaport district, protecting the community's interests and ensuring that in developers' rush to build something, they don't build the wrong thing. Our task is to create a comprehensive plan that ensures that every piece of proposed development and investment is in keeping with our overall goals for the waterfront.

On June 25, the BRA's 18-month-long series of public forums culminated in a meeting of 200 community residents, civic leaders, and planning and urban design professionals to elicit the best ideas for Seaport development. From this public meeting, we arrived at three guiding principles for our planning of the seaport: accessibility to the water and open space, variety of uses and activities, and quality of design with the buildings and streetscapes. These foundations will define what this neighborhood will look and feel like to the people who live, work, and play there.

Our open space focus will be on HarborWalk, the water surface, and new public destinations in the Seaport. HarborWalk will create more than 100 acres of green space and waterfront walkways throughout Boston, more than three times the size of the Esplanade. We will also attract people not just down to the water but over the water surface through water transport and recreational uses possible in the Fan Pier Cove. Parks and recreational venues in front of the Children's Museum, on the end of Fan Pier, and near the World Trade Center are another critical element of our master plan. These signature structures and open spaces will be the seaport district's equivalent of the Hatch Shell in the Back Bay or the Frog Pond on the Common - magnets drawing people to our waterfront.

There have been suggestions about remaking our waterfront in the image of San Francisco's Fisherman's Wharf or Baltimore's Inner Harbor. While we certainly can learn from these cities, we must remember that our waterfront already has something these others do not - a variety of uses and activities that encourage different people to experience the waterfront for different reasons. Any attempt to rid the waterfront of even one of its present uses will upset the very balance that makes it so special. When our planning is complete, people should feel that the Seaport has something for them, regardless of whether they are longshoreman from our working port, tourists visiting our convention center, shoppers browsing our retail stores, business people working in our companies, or residents living in our waterfront community. Industrial and maritime activities must be enhanced, in conjunction with the introduction of more residential and commercial uses, to retain Boston's unique waterfront character.

Finally, the BRA will ensure that the public realm, which includes the design of buildings and boulevards, is the best that it can be. We will create streetscapes that reflect the historic character of this area yet also define a new framework for a new neighborhood. These designs will go hand in hand with the creation of Boston's newest walkable boulevards, inviting pedestrians to stroll from one end of Northern Avenue to the other - all the while shopping, eating, or simply enjoying the waterfront. The setbacks of the buildings must create paths that allow people to reach the waterfront.

Some people think of public benefits as only "linkage" dollars, which are the fees levied by the city on developers to help create housing and job training opportunities. We must remember that these three themes - open space, a variety of uses, and quality of design - are just as integral a part of a public benefits package. In fact, Bostonians will be affected more by these benefits than by the millions of linkage dollars

that will come from development. These are the real ways in which the BRA can maximize development on the waterfront, and they will be presented in detail in our final master plan to be released this fall.

The character of a city is defined by its people, not its buildings. Only by making this area lively and inviting, only by creating a variety of uses that draw different people down to and onto the water, and only by ensuring the best designed and most aesthetically pleasing waterfront neighborhood will we have made the most of this incredible natural resource and fulfilled our obligation to generations to come.

<http://www.bostonseaport.com/SAND/Archive/980711bra-oped.html>

CASE IV B

SOUTH BOSTON SEAPORT REDEVELOPMENT

“With the South Boston Seaport, the BRA has the chance to reconfigure the way Boston relates to its harbor, to open it up in an unprecedented way. Elsewhere along the waterfront, development has been piecemeal -- haphazard, some would say. Here, Boston has the closest thing to a *tabula rasa* that any coastal city will ever be likely to get this late in the millennium.

“For every spectacular achievement of modern urban planning, there is an equally spectacular disaster. And along waterfronts, with all that built-in scenery and open sky, bad planning seems especially tragic.

“Take Atlantic City. There, miles of huge, ugly casinos and amusements line what could be a spectacular waterfront. A wall of buildings hugs the water's edge, turning its back on the neighborhood behind -- a mess of boarded-up and broken-down housing just two blocks from the ocean. The neighborhood and the boardwalk are separate cities, with nothing in common visually or culturally. Tourists arrive in buses, or leave their cars on buckling parking lots a few minutes from the boardwalk, sticking to the bland eateries and generic culture of the casino strip.

“At the other end of the spectrum is Sydney Harbour. There, hundreds of acres of botanical gardens and cafés line the water's edge; residents live in well-maintained mixed-income housing (some of it more than a hundred years old) at the foot of the Harbour Bridge; the Sydney Opera House, distinctive theaters and art museums, and an observatory attract visitors. Low-rise hotels and office buildings have been placed farther along the waterfront, but not too close to the shoreline. The whole area is a tourist magnet, a resident mecca, a central business district, a cultural epicenter.

“If the seaport is to work, ... the BRA has to decide what will make the waterfront the kind of place people will flock to on weekends, then regulate development accordingly. This is the difference between a road map and vision. The best plan for the area would look at the big picture -- not just for the immediate area, but for all of Boston -- and ask the question ‘What should go here so that all the city's residents can get the most benefit?’ Then it should set about tailoring development to that vision.”

Yvonne Abraham, “With the South Boston Seaport, the city could open up a spectacular new public waterfront --unless developers succeed in walling it off.”

CASE VA

THE SAVE THE [SAN FRANCISCO] BAY MOVEMENT: HISTORY AND ACHIEVEMENTS

Save The Bay was founded in 1961 by three women. Watching San Francisco Bay disappear before their eyes, Kay Kerr, Sylvia McLaughlin and Esther Gulick set out to stop the City of Berkeley's plan to double in size by filling in the shallow Bay off-shore. They mobilized thousands of members to stop the project, and their resounding victory was repeated on Bay fill projects around the region.

This first modern grassroots environmental movement in the San Francisco Bay Area won a revolutionary change - tens of thousands of Save The Bay members forced the State of California to acknowledge that the Bay belonged to the public. In 1965, Save The Bay won a legislative moratorium on Bay fill through the McAteer-Petris Act, which mandates that the Bay may only be filled only when no upland alternatives are available. The State established the [San Francisco Bay Conservation and Development Commission](#) to plan protection of the Bay, regulate shoreline development, and ensure public access, which at the time was almost non-existent, and administer the McAteer-Petris Act.

The San Francisco Bay Conservation and Development Commission (BCDC) became a permanent agency in 1969, and continues today, the first coastal zone management agency and the model for most others in the world. The agency has prevented most additional Bay fill and achieved a small net gain in the size of the Bay through tidal marsh restoration. Agency permits for development along the Bay have mandated new public shoreline access, increasing access from four miles in 1969 to over 200 miles today.

BCDC has jurisdiction over all tidal areas of San Francisco Bay, including projects within 100 feet of the shoreline. BCDC thus exercises regulatory authority over all filling and dredging in the Bay and over all development within 100 feet of the shoreline. As a coastal zone agency, BCDC jurisdiction may extend beyond the 100-foot shoreline band into adjacent lands identified in area plans. BCDC also has jurisdiction over the Suisun Marsh and other managed wetlands adjacent to the Bay, salt ponds, and certain waterways. BCDC has two fundamental objectives: (1) to protect the Bay as a natural resource for the benefit of present and future generations, and (2) to develop the Bay and its shoreline to their highest potential with a minimum of Bay filling.

Save the Bay: Four Decades of Achievement

2003 Helped state and federal wildlife agencies secure 16,500 of salt ponds for restoration to wetlands and related habitat.

Forced San Francisco International Airport to cancel runway expansion project that would have filled up to two square miles of the Bay.

Won litigation to force the U.S. Department of Interior to provide an additional 800,000 acre-feet of fresh water annually into the Bay-Delta, as mandated by the Central Valley Project Improvement Act of 1992.

2002 Published [Turning Salt Into Environmental Gold](#), demonstrating the feasibility of South Bay salt pond restoration.

Launched [Discover The Bay](#) to provide the public with fun and inspiring adventures on the Bay shoreline.

Published [Reclaiming the South Bay Shoreline](#), a Vision for Wetland restoration at Moffett Field.

Teamed up with the San Francisco Giants baseball team to skim trash from McCovey Cove at Pacific Bell Park, a partnership to help keep the Bay clean during home games.

2001 Amended San Francisco City Charter to require voter approval for any large Bay fill project – Save The Bay led the coalition that secured passage of Ballot Proposition D by a 3 to 1 margin.

Published [Putting It Back Together](#), drawing lessons from six large-scale ecosystem restoration projects across the nation to generate recommendations for San Francisco Bay-Delta restoration.

Published a new [Watershed Ecology Curriculum](#) for Bay Area teachers, meeting California's science standards for sixth through twelfth grades.

Launched a Native Oyster Restoration project, mobilizing community volunteers to monitor native oyster populations in the Bay through water quality testing, habitat assessment, and oyster shell monitoring.

2000 Launched a [Community-Based Restoration](#) program, mobilizing community volunteers and students to restore wetlands around the Bay.

Published [Protecting Local Wetlands: A Toolbox For Your Community](#), a resource to help community leaders understand and use wetland regulations.

1999 Launched a campaign to prevent unnecessary Bay fill for SFO's proposed runway expansion into the Bay.

Published a study showing the potential for the reuse of clean Bay-dredged materials to restore wetlands habitat on severely subsided Delta islands.

1997 Warned communities about the health risks of eating contaminated fish caught in the Bay. Our Seafood Consumption Information Project provided information in eight languages on how to clean and cook fish to minimize exposure to toxins.

Launched [Canoes In Sloughs](#), Save The Bay's unique, on-the-water student education program.

Produced San Pablo Baylands, a film about North Bay wetlands protection and restoration, and a stewardship program for the region.

1995 Led successful grassroots campaign to defeat Governor Pete Wilson's proposal to eliminate the Bay Conservation and Development Commission, in collaboration with the Bay Planning Coalition.

Helped create Restore America's Estuaries, a national alliance of 11 "Save The Bay" organizations stretching from Maine to Louisiana, and Seattle to Florida.

1994 Helped broker a negotiated settlement of California's "water wars," the Bay-Delta Accord, which led to the adoption of new state standards for protection of the San Francisco Bay - Delta Estuary.

1992 Save The Bay and a coalition of organizations united as "Share the Water" helped draft and win enactment of the Central Valley Project Improvement Act. Authored by Rep. George Miller and Senator Bill Bradley, and signed by President George Bush, the law is one of the most significant water policy reforms in California history.

Helped Citizens for Eastshore State Park secure state acquisition of key parcels to protect and preserve the shoreline of Emeryville, Berkeley, Albany and Richmond.

1986 Submitted a key brief in state court to protect the Bay-Delta Estuary, resulting in the Racanelli decision, regulating the amount of water diverted from the Delta and adjoining river systems.

1982 Campaigned to defeat the Peripheral Canal at the state ballot box, protecting the Delta from additional detrimental fresh water diversion.

1980 Defeated two enormous Bay fill proposals:

Off the Berkeley shoreline, through a landmark decision by the California Supreme Court in Santa Fe Railroad vs. City of Berkeley and State of California.

A proposal by the Westbay Community Associates to remove the top of San Bruno Mountain for Bay fill along San Mateo County shoreline.

1974 Secured passage of the state's first wetlands protection law, the Suisun Marsh Preservation Act.

1970 First Earth Day - Save The Bay was cited as an international model at the 1970 Stockholm Conference on the Environment.

1969 Won state legislation to make the Bay Conservation and Development Commission a permanent regulatory agency, empowered to permit development on the Bay and a 100-foot shoreline band, and to require public access to the shoreline.

1965 Mobilized tens of thousands of members and other organizations to win state legislation placing a moratorium on additional filling of San Francisco Bay. The McAteer-Petris Act established the Bay Conservation and Development Commission (BCDC) as a state agency that would become the first coastal protection agency in the United States.

1961 Save The Bay (Save San Francisco Bay Association) was founded by three women to stop unregulated filling of San Francisco Bay and to open up the Bay shoreline to public access.

CASE V B

EXCERPTS FROM THE LEGISLATION ESTABLISHING SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION (BCDC)

History

The McAteer-Petris Act (California Government Code 66600-66682) has long served as the key legal provision under California state law to preserve San Francisco Bay from indiscriminate filling. This law, enacted on September 17, 1965, established the San Francisco Bay Conservation and Development Commission as a temporary state agency charged with preparing a plan for the long-term use of the Bay (the Bay Plan). In August 1969, the McAteer-Petris Act was amended to make BCDC a permanent agency and to incorporate the policies of the Bay Plan into state law.

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CHAPTER 1. FINDINGS AND DECLARATIONS OF POLICY

66600. Declaration of Public Interest.

The Legislature hereby finds and declares that the public interest in the San Francisco Bay is in its beneficial use for a variety of purposes; that the public has an interest in the bay as the most valuable single natural resource of an entire region, a resource that gives special character to the bay area; that the bay is a single body of water that can be used for many purposes, from conservation to planned development; and that the bay operates as a delicate physical mechanism in which changes that affect one part of the bay may also

affect all other parts. It is therefore declared to be in the public interest to create a politically-responsible, democratic process by which the San Francisco Bay and its shoreline can be analyzed, planned, and regulated as a unit.

66601. Findings and Declarations as to Threat of Uncoordinated, Haphazard Filling.

The Legislature further finds and declares that uncoordinated, haphazard filling in San Francisco Bay threatens the bay itself and is therefore inimical to the welfare of both present and future residents of the area surrounding the bay; that while some individual fill projects may be necessary and desirable for the needs of the entire bay region, and while some cities and counties may have prepared detailed master plans for their own bay lands, a governmental mechanism must exist for evaluating individual projects as to their effect on the entire bay; and that further piecemeal filling of the bay may place serious restrictions on navigation in the bay, may destroy the irreplaceable feeding and breeding grounds of fish and wildlife in the bay, may adversely affect the quality of bay waters and even the quality of air in the bay area, and would therefore be harmful to the needs of the present and future population of the bay region.

66602. Findings and Declarations as to Necessity for Providing Locations for Water-Oriented Land Uses and Increased Public Access to Shoreline and Waters.

The Legislature further finds and declares that certain water-oriented land uses along the bay shoreline are essential to the public welfare of the bay area, and that these uses include ports, water-related industries, airports, wildlife refuges, water-oriented recreation and public assembly, desalinization plants, upland dredged material disposal sites, and powerplants requiring large amounts of water for cooling purposes; that the San Francisco Bay Plan should make provision for adequate and suitable locations for all these uses, thereby minimizing the necessity for future bay fill to create new sites for these uses; that existing public access to the shoreline and waters of the San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided.

66602.1. Findings and Declarations as to Importance of Salt Ponds and Managed Wetlands and Development.

The Legislature further finds and declares that areas diked off from the bay and used as saltponds and managed wetlands are important to the bay area in that, among other things, such areas provide a wildlife habitat and a large water surface which, together with the surface of the bay, moderate the climate of the bay area and alleviate air pollution; that it is in the public interest to encourage continued maintenance and operation of the salt ponds and managed wetlands; that, if development is proposed for these areas, dedication or public purchase of some of these lands should be encouraged in order to preserve water areas; that, if any such areas are authorized to be developed and used for other purposes, the development should provide the maximum public access to the bay consistent with the proposed project and should retain the maximum amount of water surface area consistent with the proposed project.

66603. Findings and Declarations as to Study of Characteristics of Bay.

The Legislature further finds and declares that the San Francisco Bay Conservation and Development Commission, treating the entire bay as a unit, has made a detailed study of all the characteristics of the bay, including: the quality, quantity, and movement of bay waters, the ecological balance of the bay, the economic interests in the bay, including the needs of the bay area population for industry and for employment, the requirements of industries that would not pollute the bay nor interfere with its use for recreation or other purposes, but would need sites near deepwater channels; that the study has examined all present and proposed uses of the bay and its shoreline, and the master plans of cities and counties around the bay; and that on the basis of the study the commission has prepared a comprehensive and enforceable plan for the conservation of the water of the bay and the development of its shoreline, entitled the San Francisco Bay Plan.

66604. Findings and Declarations as to Maximum Protection of Present Shoreline and Body of Bay.

The Legislature further finds and declares that in order to protect the present shoreline and body of the San Francisco Bay to the maximum extent possible, it is essential that the commission be empowered to issue or deny permits, after public hearings, for any proposed project that involves placing fill, extracting materials or making any substantial change in use of any water, land or structure within the area of the commission's jurisdiction.

66605. Findings and Declarations as to Benefits, Purposes and Manner of Filling.

The Legislature further finds and declares:

- (a) That further filling of San Francisco Bay and certain waterways specified in subdivision (e) of Section 66610 should be authorized only when public benefits from fill clearly exceed public detriment from the loss of the water areas and should be limited to water-oriented uses (such as ports, water-related industry, airports, bridges, wildlife refuges, water-oriented recreation, and public assembly, water intake and discharge lines for desalinization plants and power generating plants requiring large amounts of water for cooling purposes) or minor fill for improving shoreline appearance or public access to the bay;
- (b) That fill in the bay and certain waterways specified in subdivision (e) of Section 66610 for any purpose should be authorized only when no alternative upland location is available for such purpose;
- (c) That the water area authorized to be filled should be the minimum necessary to achieve the fill's purpose;
- (d) That the nature, location, and extent of any fill should be such that it will minimize harmful effects to the bay area, such as, the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment, as defined in Section 21060.5 of the Public Resources Code;
- (e) That public health, safety, and welfare require that fill be constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters;
- (f) That fill should be authorized when the filling would, to the maximum extent feasible, establish a permanent shoreline;
- (g) That fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved.

66605.1. Findings and Declarations as to Desirability of Development and Preservation of Shoreline by Public and Private Development.

The Legislature finds that in order to make San Francisco Bay more accessible for the use and enjoyment of people, the bay shoreline should be improved, developed and preserved. The Legislature further recognizes that private investment in shoreline development should be vigorously encouraged and may be one of the principal means of achieving bay shoreline development, minimizing the resort to taxpayer funds; therefore, the Legislature declares that the commission should encourage both public and private development of the bay shoreline.

CHAPTER 4. POWERS AND DUTIES OF THE COMMISSION

66630. Continuing Review of San Francisco Bay Plan.

The commission shall make a continuing review of all the matters referred to in Section 66603 and Section 66651.

66631. Cooperation Required in Making Study; Coordination With Local Agencies in Preparing Comprehensive Plan; Required Use of Data and Information Available from Other Programs.

In making the review, the commission shall cooperate to the fullest extent possible with the Association of Bay Area Governments; and shall, to the fullest extent possible, coordinate its planning with planning by local agencies, which shall retain the responsibility for local land use planning. To avoid duplication of work, the commission shall make maximum use of data and information available from the planning programs of the State Office of Planning and Research, the Association of Bay Area Governments, the San Francisco Bay Regional Water Quality Control Board, the cities and counties in the San Francisco Bay area, and other public and private planning agencies.

66632.4. Permits for Projects Within Shoreline Band Located Outside Boundaries of Water-Oriented Priority Land Uses.

Within any portion or portions of the shoreline band that are located outside the boundaries of water-oriented priority land uses, as fixed and established pursuant to Section 66611, the commission may deny an

application for a permit for a proposed project only on the grounds that the project fails to provide maximum feasible public access, consistent with the proposed project, to the bay and its shoreline. When considering whether a project provides maximum feasible public access in areas of sensitive habitat, including tidal marshlands and mudflats, the commission shall, after consultation with the Department of Fish and Game, and using the best available scientific evidence, determine whether the access is compatible with wildlife protection in the bay.

66651. Adoption and Submission of Plan; Contents; Interim Plan.

Pursuant to this title the commission has adopted and submitted to the Governor and the Legislature the San Francisco Bay Plan, a comprehensive plan containing statements and maps concerning the following:

- (a) The summary and objectives of the plan.
- (b) The bay, as a resource, including findings and policies upon: fish and wildlife; water quality; smog and weather; water surface, area, and volume; marshes and mudflats; fresh water inflow; dredging; and shell deposits.
- (c) The development of the bay and shoreline, including findings and policies upon: economic and population growth; safety of fills; water-related industries; ports; commercial fishing; airports; recreation; saltponds and other managed wetlands; transportation; other uses of the bay and shoreline; refuse disposal sites; public access; appearance, design, and scenic views.
- (d) The implementation provisions in the section on carrying out the plan.

This plan and any amendments thereto shall constitute the plan for the commission to use to establish policies for reviewing and acting on projects until otherwise ordered by the Legislature.

The plan may contain or incorporate by reference special area plans with more specific findings and policies for portions of the bay and its shoreline and other plans addressing special needs, such as seaports.

Any change to the plan shall be made exclusively in accordance with the procedures described in Section 66652 and any regulations the commission may adopt to implement Section 66652.

66652. Amendment or Repeal and Adoption of New Plan; Notice and Hearing.

The commission at any time may amend, or repeal and adopt a new form of, all or any part of the San Francisco Bay Plan but such changes shall be consistent with the findings and declarations of policy contained in this title.

Such changes shall be made by resolution of the commission adopted after public hearing on the proposed change, of which adequate descriptive notice shall be given. If the proposed change pertains to a policy or standard contained in the San Francisco Bay Plan, or defines a water-oriented use referred to in Section 66602 or 66605, the resolution adopting the change shall not be voted upon less than 90 days following notice of hearing on the proposed change and shall require the affirmative vote of two-thirds of the commission members.

If the proposed change pertains only to a map or diagram contained in the San Francisco Bay Plan, the resolution adopting the change shall not be voted on less than 30 days following notice of hearing on the proposed change, except that changes proposed under Section 66611 shall not be voted on less than 90 days following such notice, and shall, except as provided by Section 66611, require the affirmative vote of the majority of the commission members.

CASE V C

NON-POINT POLLUTION EFFECTS ON SAN FRANCISCO BAY

(08/02/1999) Scientists say San Francisco Bay fish are disappearing due to non-point pollution, including oil, pesticides such as diazinon, DDT, and dieldrin, PCBs, dioxin, and mercury. The days when San Francisco Bay reeked like a festering garbage dump are over. Municipal sewage and industrial waste no longer pour directly into the estuary. Today, thanks to tough environmental regulations enacted during the past 30 years, bay waters are relatively clear and sweet-smelling.

But many species of fish and wildlife are in steep decline. The cleanup has done little to improve their fortunes. Indeed, the bay was far richer in fish 30 years ago - when it stank to high heaven - than it is now. The problem is millions of tiny, diffuse sources of pollution. Considered separately, each is small, even inconsequential, but collectively, they are doing serious damage. Oil and gas spilled on streets, pesticides from farm fields and backyard lawns, polychlorinated biphenyls and dioxin buried in soil at thousands of small, contaminated sites all flow downhill with the rains, ending up in estuaries the bay and the ocean. As the population expands, the problem worsens.

These phantom sources of pollution have emerged as one of the most serious threats to San Francisco Bay and scientists say that traditional pollution controls may be inadequate to deal with them.

"San Francisco Bay is a catch basin for a huge area, from Redding in the north on the Sacramento River to Fresno in the south on the San Joaquin River," said Stanley "Jeep" Rice, a senior toxicologist with the National Marine Fisheries Service. "Then you have this incredibly urbanized area immediately around the bay and Delta. Every time you have a rain, you get a huge pulse of petrochemicals into the system." Rainer Hoenicke, an environmental scientist with the San Francisco Estuary Institute, an East Bay organization that monitors the health of the Bay-Delta system, said point sources of water pollution - pipe discharges - have been regulated to the degree that additional controls would provide little benefit.

Although nonpoint sources are diffuse by their very definition, their cumulative effect can be huge. Rice and a group of his fellow fisheries service scientists determined that the average American annually puts a little more than a quart of petroleum products on roads and parking lots from leaky crankcases and exhaust emissions. That means that the 11 million people who live in the 31 counties that border San Francisco Bay or the rivers that ultimately flow into it collectively, if indirectly, dump about 2.97 million gallons of oil a year into the watersheds that feed the bay-Delta system. (By comparison, the Exxon Valdez oil spill was about 11 million gallons.)

"Worries about nonpoint pollution sharpened recently with a study led by Rice that found minute quantities of oil can devastate fish eggs and larvae. The study was initiated to determine the long-term effects of the 1989 Exxon Valdez oil spill on Alaska's Prince William Sound, but the startling results may be more relevant to urban estuaries such as San Francisco Bay. "We found that long-term exposure to oil in the parts per billion range produced significantly more egg mortality, more deformities in the fry and less adult survival than (fish) raised in an oil-free environment," Rice said. "That was very surprising, because we were dealing with levels of oil on three orders of magnitude less than were previously considered toxic.

Dioxin is another worry. One of the most toxic compounds known, minute amounts can cause cancer and reproductive disorders. Several species of San Francisco Bay fish contain enough dioxin - as well as other contaminants - to make their consumption a public health concern. Dioxin is a byproduct of the manufacture of certain pesticides. It is also formed in combustion processes involving fuel that contains both chlorine and carbon. The burning of diesel fuel, coal or wood results in the formation of dioxin. In the past, much of the dioxin that got into the bay probably came from now-banned pesticides and industrial waste discharges. Today, most comes from diesel exhaust. Recently, the Oakland City Council and the San Francisco Board of Supervisors voted to support a regional plan calling for the complete elimination of dioxin discharges into the bay. But given current sources of the compound, achieving such a goal will be difficult. As with polychlorinated biphenyls, not much dioxin is estimated to flow into the bay - about three grams a year. But like PCBs, dioxin is extremely long-lasting and can move about freely in the environment. "Intuitively, that doesn't seem like much," said Brian Bateman, the air toxics manager for the Bay Area Air Quality Management District. "But it's extremely toxic, and we also have to deal with 'reservoir' sources - the dioxin that got into the bay years ago."

Mercury is released from fuel combustion in cars and at refineries, cement kilns and power plants. It's in silver amalgam fillings, so it gets into the sewage system from dentists' offices. It's in fluorescent lights, camera and watch batteries and certain electrical switches. DDT and dieldrin, which have been banned for decades, continue to pollute bay fish. Both compounds - known as chlorinated hydrocarbon pesticides - are extremely stable and take decades to degrade. Yet DDT tissue levels in local fish appear to be gradually decreasing.

Of greater concern these days are organophosphate pesticides. Organophosphates replaced the earlier pesticides, promoted as short-lived compounds that would break down quickly when exposed to sunlight and soil. Tons of organophosphate poisons get into the bay each year - not just from farms in the Central Valley, but from golf courses and the lawns and gardens of the thousands of homes ringing the estuary. Experts say pesticides are often applied more heavily in and around homes than on commercial crops. But "some of the organophosphates don't break down as quickly as promoted," said Spies. "At least one, Diazinon, is a serious contaminant in the bay. It's used in agriculture and around the home to control fleas and ants." Spies explained that organophosphates kill insects by interfering with an enzyme that aids in the transmission of nerve impulses. "Unfortunately, shrimp and numerous other marine animals are biologically similar to insects, so it affects them as well," he said.

A 1993 study by the U.S. Geologic Survey concluded that large "pulses" of Diazinon flow through San Francisco Bay from the Sacramento and San Joaquin rivers after major storms. Concentrations of the pesticide in bay water can be alarmingly high during such events - as much as 199 nanograms per liter. Although a nanogram is only one-billionth of a gram, the National Academy of Sciences has issued guidelines stipulating that maximum Diazinon concentrations should not exceed nine nanograms per liter of water if aquatic life is to thrive.

Ultimately, the problem is not simply PAHs or PCBs or Diazinon or dioxin, say scientists. It is probably all of them combined, each working in malign concert with the other. Unfortunately, research is scant on the cumulative effects of the various toxic compounds circulating in urban estuaries. "A lot of the available research money is going to the examination of short-term impacts" of specific chemicals, said Spies. "We're not looking at the long-range implications of the entire soup of compounds out there in the bay."

One thing is clear about San Francisco Bay: For whatever reason, marine life has been greatly reduced. Rice thinks "compound soups" may gradually depress fish populations to the point of no return. "You don't see the huge fish kills that you used to get in the old days from sewage spills or big industrial releases of chemicals," he said. "But these compounds appear to be acting at the larval and egg stages, so you get less and less recruitment with each generation of fish. They just kind of fade away. And then fishermen suddenly start wondering why they aren't catching anything."

Rice thinks healthy wetlands are essential in reducing the effects of polluted runoff. "Wetlands are filters. They remove and degrade all sorts of toxic compounds. The more wetlands you have around a bay, the more filtration you get." Wil Bruhn, a senior engineer with the San Francisco Bay Regional Water Quality Board, said the problem of nonpoint pollution is confounding simply because it is caused by millions of people involved in the daily, mundane process of living their lives - driving their cars, caring for their lawns, consuming products. "For example, we've determined that the biggest source of copper - a serious pollutant in the bay - is now coming from brake pad dust," Bruhn said. "It used to be industry that was the biggest source. And when it was industry causing the problem, it was easy to regulate - we issued discharge standards. But regulating millions of brake pads is much harder."

After 30 years of hard work, environmentalists and regulators alike hoped that there would be a big payoff for the bay - that the fish and wildlife would return to waters that no longer stank, that were no longer mottled by mysterious slicks and scum. But the payoff never happened - and a growing number of scientists think the reason is small but persistent quantities of toxic compounds. And they believe that a completely new approach to pollution control is necessary to address them. "The whole toxic paradigm has changed," Rice said. "It's not a matter of all or nothing. If you have trace levels of compounds in the water that are killing 5 to 10 percent of the eggs and young fish each year, you're still going to come to a point when you have no fish. You'll still end up with an empty system."

Earth Spirit: Ecosystem Destruction: San Francisco Bay, 2005

Appendix II
Pending & Other Relevant Legislation
& International Treaties

Other Applicable Legislation

Table A Applicable Legislation – sewage pollution

(i)	The Natural Resources Conservation Authority Act, 1991
(ii)	The National Water Commission Act, 1963
(iii)	The Office of Utilities Regulation Act, 1995
(iv)	The Kingston and St. Andrew Corporation Act, 1931
(v)	The Kingston Improvements Act, 1890
(vi)	The Parish Councils Act, 1901
(vii)	The Local Improvements Act, 1914
(viii)	The Local Improvements (Community Amenities) Act, 1977
(ix)	The Housing Act, 1969
(x)	The National Solid Waste Management Authority Act, 2002
(xi)	The Public Health Act, 1985
(xii)	Pending: Draft – National Sewage Effluent Regulations
(xiii)	Pending: Draft – Water and Sewerage Services Act

A useful point of departure in considering sewage is at the development stage where structures are being put in place for human occupation entailing the need for sewage services.

The Local Improvements Act, 1914 mandates that persons desirous of subdividing land for building or sale apply to the local authority (in this case, the KSAC or St. Catherine Parish Council, as may be applicable) for permission to do so and give particulars as regards proposed sewers.¹

The local authority refers matters regarding sewage to the NWC. In granting approval, the local authority will normally impose conditions in respect of sewage.

Provisions similar to those under the Act obtain under **The Kingston Improvements Act, 1890** but are specific to Kingston and St. Andrew.

However, under **The Housing Act, 1969** and **The Local Improvements (Community Amenities) Act, 1977**, the Minister of Housing, is exempted from

¹ See: *Section 5, ibid.*

such provisions as regards respectively housing schemes and “squatter settlements”.

Private developers are beginning to provide sewage services alongside the NWC which is empowered under **The National Water Commission Act, 1963** to impose sewage rates and require owners of premises to have their premises connected to any sewage system which it constructs, extends or operate. Public sector developers such as the UDC also provide sewage facilities.

A **Water and Sewage Services Bill** is being drafted towards, *inter alia*, removing the regulating powers of the NWC, it now has to regulate its (relatively few) competitors, who provide sewage services. It is being considered that the new legislation would restrict the setting of tariffs to the OUR under **The Office of Utilities Regulation Act, 1995** as well as rationalize the roles of NEPA (NRCA) and the NSWMA,² which have mandates, as already indicated, in respect of sewage under **The Natural Resources Conservation Authority Act, 1991** and **The National Solid Waste Management Authority Act, 2002**.

There are Draft National Sewerage Services Regulations which stipulate requirements and standards for the treatment of sewage, discharge of sewage effluent, the operation and maintenance of sewage treatment plants, their monitoring, the provision of reports on them as well as for incentives and penalties.

Overall, there is an urgent need for rationalization and streamlining of legislation to *inter alia*, reflect an awareness of the grave effect that untreated sewage is having on Kingston Harbour.

The Water Sector Policy recognizes that “Sewage disposal practices are ... often inadequate” and that “the NWC’s infrastructure is in a generally poor state, and significant investment will be needed to rehabilitate it.”³

There is a stated commitment in the policy to “ensure improvements in sewage treatment and disposal, to protect the environment”.⁴ This is to be achieved, *inter alia*, by an update of the legislative framework and “*effective and efficient operation of an appropriate regulatory framework to protect customers, investors and the environment.*”⁵ The process of legislative and institutional change needs to be accelerated.

² See: Hunter, E.G.: *Issues of Water Supply and Sewage Disposal, Jamaica Mortgage Bank Housing Development Seminar Papers, 2/11/04, p. 11.*

³ See: *Water and Sanitation 2000 and Beyond, The Observer Water Policy Supplement, October 3, 1999, p. 24.*

⁴ *Ibid.*

⁵ *Ibid, p. 26.*

As regards ship-source pollution (Table A), legislation is urgently needed to provide ample legal protection in the event of a major oil spill or spillage of noxious, toxic, radioactive or nuclear waste.

For agricultural run-off (Table C), there needs to be promulgated standards of best agricultural practice, vis-à-vis such run-off having a deleterious effect on the harbour.

The position as regards gullies need to be clarified and a particular entity be fixed with responsibility for cleaning them. At present there is much unclarity, as the NWA is responsible for some, the KSAC others and agencies such as NSWMA having some responsibility in so far as solid waste is concerned.

Table B Legislation - ship-source pollution

(i) Draft The Shipping (Pollution Prevention [and Control]) Act
(ii) The Natural Resources Conservation Authority Act, 1991
(iii) The Harbours Act, 1874
(iv) The Shipping Act, 1998
(v) The Carriage of Goods Act, 1889
(vi) The Natural Resources (Hazardous Waste) (Control of Transboundary Movement) Regulations, 2002
(vi) The National Solid Waste Management Authority Act, 2002
(vii) The Disaster Preparedness and Emergency Act, 1993
(viii) The Carriage of Goods Act, 1889
(ix) The Maritime Areas Act, 1996
(x) The Beach Control Act, 1956
(xi) Pending: Draft - The Shipping (Pollution Prevention [and Control]) Act

Table C Legislation - pollution by agricultural run-off

(i) The Natural Resources Conservation Authority Act, 1991
(ii) The Pesticides Act, 1987

Table D Legislation – other pollution sources

(i)	The Natural Resources Conservation Authority Act, 1991
(ii)	The National Solid Waste Management Authority Act, 2002
(iii)	The Main Roads Act, 1932
(iv)	The Parochial Roads Act, 1932
(v)	The Roads Protection Act, 1937
(vi)	The Flood Water Control Act, 1961
(vii)	Pending: Draft – Trade Effluent and Industrial Regulations

Table E Legislation - ownership of the harbour & adjoining property

(i)	The Beach Control Act, 1956
(ii)	The Crown Property (Vesting) Act, 1960
(iii)	The Port Authority Act, 1972
(iv)	The Urban Development Corporation Act, 1968
(v)	The Airports Authority Act, 1974
(vi)	The Port Royal Brotherhood Act, 1952
(vii)	The Registration of Titles Act, 1889
(viii)	The Conveyancing Act, 1889

Table F Legislation - exploitation of resources (minerals, fisheries, underwater cultural heritage, tourism, amenities, shipping facilities, etc.) of harbour

(i)	The Beach Control Act, 1956
(ii)	The Harbours Act, 1874
(iii)	The Minerals (Vesting) Act, 1947
(iv)	The Mining Act, 1947
(v)	The Petroleum Act, 1979
(vi)	The Quarries Control Act, 1984
(vii)	The Fishing Industry Act, 1976
(viii)	The Maritime Areas Act, 1996
(ix)	The Wild Life Protection Act, 1945

(x) The Endangered Species (Protection, Conservation and Regulation of Trade) Act, 2000
(xi) The Aquaculture, Inland and Marine Products (Inspection, Licensing and Export) Act, 1999
(xii) The Tourist Board Act, 1955
(xiii) The Tourist Board (Tourism Enterprise) Order, 1985
(xiv) The Tourist Board (Water Sports) Regulations, 1985
(xv) The Shipping Act, 1998
(xvi) The Port Authority Act, 1972
(xvii) The Jamaica National Heritage Trust Act, 1985
(xviii) Pending: Draft - The Port Authority of Jamaica Act

1.1. Pending Legislation

1.1.1. Draft - The Shipping (Pollution Prevention [and Control]) Act

This is [An Act to provide for the protection and preservation of the [Jamaican] marine environment from pollution by ships, intervention on high seas in cases of pollution; the prevention of pollution from ships, the prevention of dumping from ships into navigable waters, regulating the nautical movement and disposal of pollutants and to establish regimes for liability for compensation for pollution damage, and for the matters incidental thereto].

As a matter of urgency, this draft legislation, which is far advanced, needs to be finalized and made law post-haste as it stands to provide the only piece of modern legislation that is directed at addressing the risk of catastrophic (or lesser) damage by spillage from ships of oil and other polluting substances into Jamaica's marine environment, including that of Kingston Harbour. Overall, the legislation stands to provide a vital buttress to the Kingston Harbour rehabilitation efforts.

The draft legislation seeks to address many gaps and weaknesses in Jamaica's law relating to marine pollution, while incorporating a number of international maritime treaties.

As particular international Conventions are being incorporated and made part of Jamaican law, via this pending legislation, consideration of them is tantamount to consideration of what the enacted legislation is to include when the draft legislation is eventually transformed into law. Accordingly, the stipulations of

the Convention are summarized at this juncture in the Report to indicate what this pending legislation will include.

The International Convention for the Prevention of Pollution from Ships 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

This Convention covers technical aspects of pollution from ships and is geared towards eliminating or minimizing operational and accidental pollution from ships. It regulates pollution by oil, noxious liquid substances carried in bulk, harmful substances carried in packages, portable tanks, freight containers or road or rail tank wagons, sewage from ships and garbage.

The Convention's basic requirement is that only very limited or no discharges of the substances covered by it are permitted. Generally, discharges should be made as far from land as practicable and there are detailed stringent discharge standards to be followed when carrying out a discharge.

In order for ships to comply with the Convention's highest discharge standards, they are required to be constructed and equipped in a manner to enable the substances involved to be retained on board at sea.

Upon entering a port, a ship should be able to discharge the substances thus retained into shore reception facilities. Hence, Jamaica, as a party to the Convention is required to provide and maintain adequate reception facilities (for the discharge of oil residues, noxious chemical substances, sewage and garbage emanating from ships) which can be used by ships without causing undue delay.

Ships are required to have surveys done, obtain international certificates attesting to their compliance with Convention requirements and are subject to inspection and detention to ensure that the ship does not pose an unreasonable threat of harm to the marine environment.

Concomitant with the requisite legislation, now in draft, to incorporate the Convention requirements into Jamaican law, is needed infrastructure. Importantly, there is a need for reception facilities. A marine administration with suitably trained administrative and technical personnel to be provided by the Maritime Authority of Jamaica is needed to, *inter alia*, establish systems of surveys and certification of ships, authorize and supervise classification societies work, maintain records for Jamaican flag ships, (registered on Jamaica's international ship registry) inspect ships, detect discharges, investigate casualties and prepare and submit reports to the International Maritime Organization (IMO).

Enforcement of the Convention provisions in court warrants procuring and furnishing evidence in a manner and of a quality that can withstand judicial

scrutiny and in this regard appropriate technical equipment to verify discharge breaches are vitally important. Also required are adequate monitoring and law enforcement capabilities, inclusive of a Marine Police and Coast Guard with ample capacity for their respective roles.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972

The Convention generally prohibits the dumping at sea of wastes or other matters. Exceptions to this general prohibition are in respect of dredged material, sewage sludge and fish waste.

Permits are required for the carrying out of certain dumping and contracting parties to the Convention undertake to designate an authority to deal with permits, keep records and monitor the condition of the sea.

The International Convention on Civil Liability for Oil Pollution Damage, 1992 & The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992

The Civil Liability Convention and the Fund Convention are companion treaties which deal with liability and compensation for oil pollution. They apply to spills of persistent oil from ships constructed to carry oil in bulk as cargo and actually doing so (oil tankers).

The aim of the Civil Liability Convention is to ensure that adequate compensation is available to persons who suffer oil pollution damage resulting from maritime casualties involving oil-carrying ships.

Under the Convention, claims for compensation for oil pollution damage to a harbour may be brought against the owner of a ship which causes damage (or the ship owner's insurer). Such compensation is also payable for the cost of reasonable measures to prevent or minimize pollution damage.

Liability is strict for and attaches to the ship owner even in the absence of negligence or culpability, where there is an escape or discharge of persistent oil from the ship. An exception to this general position is where the damage is wholly caused by the negligence of public authorities (such as the Port Authority of Jamaica), in maintaining lights or other navigational aids.

All ships carrying a certain minimal amount of oil in bulk as cargo are required to maintain insurance or other financial security to cover the ship owner's liability under the Convention. The furnishing of evidence of financial responsibility to permit direct action by a claimant against the producer is a condition of entry into the waters of a state party.

Such ships calling on a port in Jamaica must have mandatory insurance (“evidence of financial responsibility against risks of damage to third parties”) as provided for by The Shipping Act, 1998.⁶

The ship owner is normally entitled to limit his liability to an amount determined by the size of the ship.

The Fund Convention provides additional compensation to claimants where the ship owner’s liability under the Civil Liability Convention is exceeded or where claimants are unable to obtain adequate compensation from the ship owner (or his insurer).

Under the Fund Convention, a worldwide intergovernmental organization - The International Oil Pollution Compensation Fund, 1992 (IOPC Fund) is set up by states to provide such compensation. The IOPC Fund is basically a mutual insurance entity for oil pollution incidents set up by Governments but financed by oil interests. The IOPC Fund is strictly liable in the same manner as the ship owner under the CLC. It operates on a post-event or post-pollution incident basis, whereby whenever it is liable to pay compensation it levies money from the receivers (such as Petrojam) of persistent oil in signatory states based on the quantity of such oil imported by the receivers.

The Fund imposes the levy among all receivers in signatory states in proportion to the quantity of oil each receives. Hence, although Jamaica has to import the persistent oil it requires, being a relatively small importer in world terms, it stands to effectively enjoy inexpensive insurance against potentially very expensive oil spills.

Anyone who has suffered pollution damage in a member state of the IOPC Fund may make a claim against the organization for compensation. Such a claim may be made for loss suffered by the owner or user of property contaminated as a result of a spill (consequential loss), for example, a fisherman’s loss of income as a result of his nets being polluted.

Importantly, claims may also be accepted by the IOPC Fund, where the loss is pure economic loss, that is, loss of earnings sustained by persons whose property has not been polluted, but only if such loss or damage is caused by contamination which is reasonably proximate to the loss or damage sustained by the claimant.

Such claims may be by fishermen whose boats and nets have not been contaminated but are prevented from fishing in the polluted area or hoteliers or restaurateurs located near the polluted area losing profits due to the pollution.

⁶ per *Section 15(4)*, *ibid.*

Claims for the cost of measures to prevent pure economic loss may also be accepted or honoured by The IOPC Fund.

Claims for impairment of the environment are accepted only if the claimant has sustained an economic loss which can be quantified in monetary terms. Compensation for impairment of the environment is payable only for costs incurred (or to be incurred) for reasonable measures to reinstate the contaminated environment.⁷ Claims for damage to the ecosystem are not admissible.

The Civil Liability Convention, while limited in application to laden tankers does cover bunker spills from such ships.

International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC)

While paying cognizance to the importance of precautionary measures and prevention in avoiding oil pollution in the first place, the Convention seeks to provide a global framework for international co-operation in combatting effectively major incidents or threats of marine pollution. Parties to the Convention are required to establish measures for dealing with pollution incidents nationally and/or in co-operation with other countries.

Ships are required to report incidents of pollution to coastal authorities and the Convention sets out actions to be taken and stipulates the establishment of stockpiles of oil spill combating equipment, the holding of oil spill combating exercise and the development of detailed plans for dealing with pollution incidents.

In endeavouring to take “all appropriate measures” to prepare for and respond to an oil pollution incident, Jamaica is required to ensure that authorities or operators in charge of seaports, oil handling facilities or offshore units in or affecting the harbour have oil pollution emergency plans or similar arrangements which are co-ordinated with a national (and regional) system for preparedness and response, for which there is a competent national authority for oil pollution preparedness and response (which for Jamaica is the ODPEM), national operational contact point(s) with responsibility for the receipt and transmission of oil pollution reports and an authority entitled to act on behalf of Jamaica to request assistance or to decide to render assistance requested and there is a national contingency plan for preparedness and response encompassing the organizational relationship of various bodies involved.

⁷ *International Oil Pollution Compensation Fund 1992 Claims Manual, June 2000.*

Jamaica is also required to have a minimum level of pre-positioned oil spill combating equipment, a programme of exercises for oil pollution response organizations, trained personnel, detailed plans and continuously available communication capabilities for responding to an oil pollution incident and a mechanism to co-ordinate the response to such incident.

Under the Convention persons having charge of seaports, oil handling facilities, maritime inspection vessels or aircraft are required to report without delay events involving the discharge of oil or presence of oil in the harbour.

By the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000 (OPRC-HNS Protocol) the Convention was expanded to include hazardous and noxious substances. Jamaica should seek to implement this Protocol as well.

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 (Intervention); Protocol 1976

This Convention affirms the right of a coastal state, such as Jamaica, to take such measures on the high seas (seas outside its national jurisdiction), as may be necessary, after due consultation with interested parties (such as the owner of the ship involved in posing the threat by spilling its cargo of oil or other polluting substances) to prevent, mitigate or eliminate danger to its coastline or related interests from pollution by oil or other polluting substances or the threat thereof, following upon a maritime casualty or pollution incident on the high seas.

The United Nations Convention on the Law of the Sea, 1982

This Convention is a multi-faceted umbrella international law Constitution for world marine space and provides a broad framework for protection and preservation of the marine environment, encompassing general provisions, global and regional co-operation, technical assistance, monitoring and environmental assessment, enforcement, responsibility and liability of state parties.

The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, 1983 ("Cartagena Convention")

This Convention requires Jamaica to, *inter alia* take all appropriate measures to prevent, reduce and control pollution and to ensure sound environmental management, inclusive of preventing, reducing and controlling pollution from ships, waste-dumping at sea, land-based sources, air-borne sources and sea-bed activities.

Jamaica is required to carry out environmental impact assessments for major development projects and is part of a framework for regional cooperation, with the prospect of benefiting from such cooperation in scientific research monitoring, the exchange of data and in cases of emergency.

The Protocol Concerning Co-operation in Combatting Oil Spills, 1983

This Protocol, to the Cartagena Convention, requires Jamaica to institute measures to help prevent and remediate oil spills in the marine environment, including developing capabilities to respond appropriately to spill emergencies.

The International Maritime Dangerous Goods Code

The Code governs the carriage of dangerous goods by sea and helps to guard against the risk of such goods polluting the harbour.

1.1.2. Draft – The Port Authority of Jamaica Act

The Draft Memorandum of Objects and Reasons of the Bill (2003 draft) states that the pending legislation is to provide, *inter alia*, for:-

- “(a) *the establishment of a Port Authority as a body corporate the powers of which include:-*
- (i) the conservation, maintenance and improvement of harbours and the approaches thereto;*
 - (ii) the provision, maintenance and operation of navigational aids in harbours and in Jamaican waters;*
 - (iii) the provisions, maintenance and operation of port facilities and other services;*
 - (vii) serving of notices to require the removal of works which contravene the provisions of the Act;*
 - (viii) the appointment of a Harbour Master and Deputy Harbour Master;*
 - (ix) the making of regulations to inter alia –*
 - (aa) prescribe fees, dues, rates and other charges in relation to services performed or facilities provided by the Authority;*

(bb) provide generally for harbour management, including the movement into and out of vessels, the loading, unloading and anchorage of vessel;

(cc) provide for the movement of vessels carrying dangerous goods and the loading and unloading of dangerous goods;

(x) imposing a cess for the improvement of any port facility including the dredging of any harbour, river or waterway;

(b) the licensing of:-

(i) dredging operations within harbours or ports or the approaches thereto;

(ii) construction activities (including construction of wharves and seawall);

(c) the provision of security measures in respect of harbours.”

The (2003) draft of the Bill indicates that consideration is being given to empower the Port Authority to regulate water sports within Jamaican waters, subject to the provisions of other legislation.

Legislation to be repealed by the pending legislation include The Harbours Act, 1874, The Harbour Lights and Lighthouses Act, 1900, The Harbour Fees Act, 1927 and The Port Authority Act, 1972.

Contemplated – The National Environment and Planning Act

A new Act is contemplated to replace **The Natural Resources Conservation Authority Act, 1991**.

International Treaties

Apart from the international treaties already mentioned, other relevant treaties include a number of treaties dealing with maritime safety, towards minimizing the risk of ship-source pollution to the marine environment. Some of these are set out hereunder.

International Convention for the Safety of Life at Sea, 1974, (SOLAS)

The main objective of this Convention is to specify minimum standards for the construction, equipment and operation of ships compatible with their safety.

International Convention on Load Lines, 1966 (LL)

Towards ships safety, this Convention places limits on the draught to which a ship may be loaded, that is, ensure it is not over loaded and providing for its weathertight and watertight integrity.

Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS)

This Convention provides rules towards minimizing the risk of collision of vessels in harbour.

International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW)

This Convention establishes basic requirements on training, certification and watch keeping for seafarers on an international level towards minimizing risk of casualty and damage to the marine environment due to human error in ship navigation.

New International Treaty Jamaica Should Consider

Jamaica needs to consider becoming a party to The International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004, which contains measures to prevent the potentially devastating effects of the spread of harmful aquatic organisms carried by ships' ballast water, to living resources of the harbour.

The Convention requires all ships to implement a Ballast Water and Sediments Management Plan and carry out ballast water management procedures to a specific standard.