

**UNITED STATES VIRGIN ISLANDS WATERSHED  
RESTORATION ACTION STRATEGIES**

**DRAFT  
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## **1.0 INTRODUCTION**

This document constitutes the Virgin Islands' Watershed Restoration Action Strategies (WRAS), developed subsequent to the Virgin Islands' Unified Watershed Assessment (UWA) in fulfillment of the federal Clean Water Action Plan Initiative. The expectation of the WRAS is to improve the water quality conditions of Virgin Islands waterbodies in order to guarantee all citizens clean and safe waters, consistent with the goals of the Clean Water Act (CWA).

It is the purpose of the present document to address general and specific point and nonpoint sources pollution problems; and identify management measures to mitigate the different causes of water quality impairment through the implementation of different protection and control strategies. These strategies will include, but are not limited, to activities such as: 1). increasing the number of monitoring networks, 2). increasing the frequency of monitoring, 3). creating a number of monitoring and assessment partnerships between governmental agencies and private sectors, 4). developing Best Management Practices (BMP's) for non-point activities, 5). pursuing an aggressive outreach program to seek the integration of the public and the concerning agencies in the restoration activities and 6) promulgating legislation and/or amending environmental regulations to allow for more effective enforcement. However, the most fundamental element that will make the WRAS more effective will be the involvement and integration of the different federal and local agencies and the citizens in the implementation of the restoration activities.

## **2.0 OVERVIEW**

The UWA was approved by the US Environmental Protection Agency (EPA) in October of 1998. The UWA was the result of the evaluation of the different watersheds of the island taking in consideration different assessment criteria. This document identified 13 high priority Category I watersheds. Category I watersheds are defined as watershed which do not meet or are in imminent danger of not meeting Water Quality Standards. The criteria that were considered to established the restoration priorities were:

1. Criteria for defining watersheds in most need of restoration;
2. Consideration of existing restoration priorities;
3. A long term action schedule for developing response plans and focusing on 2000-2002; and
4. A process for involving diverse federal and local agencies, conservation district/land conservation departments, non-governmental and private voluntary organizations, the public, and others in priority setting.

Based on the results of the UWA, the restoration activities proposed in the WRAS will address the pollution sources and causes found in Category I watersheds.

### 3.0 FRAMEWORK FOR WATERSHED RESTORATION STEPS AND ACTIVITIES

#### 3.1 Initial Planning: Stakeholder Involvement

The WRAS was developed through the combined efforts of Federal, Territorial and local government representatives, industry and environmental groups and university researchers as well as private organizations and the public

#### 3.2 Watershed Characterization and Assessment

Based on the findings of the UWA, the watersheds on St. Croix, St. Thomas and St. John are classified into the following four categories:

##### 3.2.1 Category I-Watershed In Need of Restoration

Category I watersheds do not now meet or are in imminent danger of not meeting clean water and other natural resource objectives. Selection factors include:

- ❑ nonattainment of national clean water goals (including exceedances of state or tribal water quality standards, or impaired drinking water sources, etc.);
- ❑ nonattainment of natural resource goals related to the aquatic systems, including goals related to habitat, ecosystem health, and living resources;
- ❑ other appropriate measures of and indicators, of degraded aquatic system conditions (e.g., wetland condition and current and historical loss rates, percent impervious surface, and other measures of aquatic habitat); and
- ❑ decline in the condition of living and natural resources that are part of the aquatic system in the watershed (e.g., decline in the populations of rare and endangered aquatic species, decline in healthy populations of fish and shellfish, etc.)

Category I watersheds in the territory are listed in Table 1. They include seven watersheds on St. Croix, four watersheds on St. Thomas and two watersheds on St. John. The location of these subwatersheds are in bold and shown in Attachment 1 (Figure 1 through 3)

Table 1: Category I Watershed

<b>St. Croix</b>	<b>St. Thomas/ St. John</b>
Bethlehem	St. Thomas Harbor & Long Bay
HOVIC-STX Alumina	Red Hook Bay
Airport	Benner Bay
Diamond	Magens Bay
Southgate	Great Cruz Bay
Christainsted	Fish Bay
Great Pond	

**3.2.2 Category II-Watersheds Meeting Goals, Including Those Needing Action to Sustain Water Quality-**

The category II watersheds meet clean water and other natural resource standards and supported healthy aquatic systems. These watersheds require continuing implementation of clean water and natural resource programs in order to maintain water quality and conserve natural resources.

Table 2: Category II Watershed

<b>St. Croix</b>	<b>St. John</b>
Fort Frederik	Emmons Bay
Enfield Green	Cocoloba
Half Penny Bay	
Judith's Fancy	
Orange Grove Water Got.	
Manchenil Bay	
Sugar Bay	
Dolby Hill	
Cane Garden	

**3.2.3 Category III- Watersheds with Pristine or Sensitive Aquatic System Conditions on Lands Managed by Federal, State, and Tribal Governments-**

The category III watersheds have exceptionally pristine water quality, are major drinking water sources, or support sensitive aquatic system conditions. These are located on lands administered by federal, or local governments.

Table 3: Category III Watershed

<b>St. Croix</b>	<b>St. John</b>
Hams Bay	Maho Bay
Long Point Bay	Genti Bay
Long Point	Little Lameshur
	Brown Bay
	Grootpan

**3.2.4. Watersheds With Insufficient Data To Make An Assessment-Category IV**

The category IV watersheds lack data, critical data elements, or the data density needed to make a reasonable assessment.

Table 4: Category IV Watershed

<b>St. Croix</b>	<b>St. Thomas</b>
Whim Prosperity	Bordeaux Point
Good Hope	Santa Maria Bay
Spring Bay	Krabbepan Point
Solitude Bay	Cyril E King Airport
Rust Up Twist	Dorothea

The watersheds identified under the UWA were evaluated based on the following factors:

- ❑ NPS Pollution: runoff, erosion & sedimentation, OSDS, saltwater intrusion, sewage, etc.
- ❑ Areas of Particular Concern (APCs):Coastal Zone Management Act of 1974
- ❑ Clean Water Act Section 305(b) Report: State Biannual Water Quality Report to US Environmental Protection Agency.
- ❑ Clean Water Act (303(d) List of Impaired Water Bodies.
- ❑ Territorial Pollutant Discharge Elimination System (TPDES) point source discharges.
- ❑ DEP Water Pollution Control Program list of reported unpermitted discharges and sewage bypasses.
- ❑ DEP Underground Storage Tank Program inventory.
- ❑ DEP Public Water Supply Supervision Program inventory of Reverse Osmosis plants utilizing sea water and/or groundwater intake.
- ❑ USEPA List of Resource Conservation and Recovery Act (RCRA) facilities in the USVI.
- ❑ USEPA List of Underground Injection Control (UIC) facilities in the USVI.
- ❑ Areas of Special Significance: Federal Wildlife Refuge, VI Marine Reserve/Wildlife Sanctuary , post Hugo assessment of priorities for conservation action.
- ❑ Pesticides storage facilities under Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
- ❑ Areas protected by the Coastal Barriers Improvement Act (CBIA).
- ❑ DFW inventory of Fish and Wildlife Resources.
- ❑ CZM inventory of Marine Habitats.
- ❑ USDA-NRCS -Highly I.,Erodeable.,Land soil-type description.
- ❑ Others, including CERCLA sites.

### **3.3 Watershed Problem Identification and Prioritization**

According to the UWA, Category I watersheds can be grouped into two major groups:

- industrial/urban watersheds; and
- natural resource watersheds.

The industrial/urban watersheds are impaired primarily due to industries, urbanization, landfills and sewage outfalls. This category includes the following watersheds: St. Thomas Harbor (urban), Red Hook Bay (urban), Benner Bay (landfill/industrial) Great Cruz Bay (urban), Christiansted (urban/sewage), Sandy Point (urban/sewage) Bethlehem (industrial/sewage), HOVIC-STX Alumina (Industrial), Airport (landfill/industrial) and Diamond (industrial). The last four constitute the South Shore Industrial area on St. Croix.

The natural resource watersheds terminate in the sea, lagoons or saltwater ponds and are areas of important wildlife habitats. In addition, these watershed are ecologically sensitive and many are important as fish nurseries. The following constitutes the natural resources watersheds: Altoona sub-watershed of the Christiansted watershed and Vessup Bay sub-watershed of the Red Hook watershed.

Table 5 identifies Category I watershed in most need of restoration and provide a preliminary long-term schedule for developing a response plan. In addition, a map outlining these watersheds can be found in Attachment 1; Figures 1 through 3.

Table 5: Priority Ranking, Category I Watersheds

<i>St. Croix Category I</i>	<i>Priority Ranking</i>	<i>Schedule for Developing Response Plans</i>
<b>Bethlehem</b>	<b>1-Highest</b>	1999-2002
<b>HOVIC-STX Alumina</b>	<b>1-Highest</b>	1999-2002
<b>Airport</b>	<b>1-Highest</b>	1999-2002
<b>Diamond</b>	<b>1-Highest</b>	1999-2002
Christainsted	2-Moderate	2000-2004
Southgate	3-Lowest	2000-2004
Great Pond	3-Lowest	2000-2004
<i>St. Thomas/St. John Category I</i>		
Benner Bay	<b>1-Highest</b>	<b>1999-2002</b>
St. Thomas Harbor & Long Bay	2-Moderate	2000-2004
Fish Bay	2-Moderate	2000-2002
Red Hook Bay	3-Lowest	2000-2002
Magens Bay	3-Lowest	2000-2002

### 3.4 Watershed Area Description

As shown in Table 5, the highest priority category I watersheds as per the UWA are: Benner Bay and Bethlehem, HOVIC-STX Alumina, Airport, and Diamond (Southshore Industrial Area). These watersheds represent five (5) of the most important bodies of water of the Virgin Islands because of the territorial extension that they cover, the numbers of water intakes that they have and the importance of the different economical activities that had been developed in the surrounding areas. Additionally, the Fish Bay watershed on St. John will also be addressed.

### 3.4.1. Benner Bay/Mangrove Lagoon

The Benner Bay watershed resource use is summarized in Table 6

Table 6: Benner Bay/Mangrove Lagoon Major Land and water use

This watershed constitutes 1/3 of St. Thomas's population	This watershed's waters, mangrove and seagrass bed provided a rich area for fish and a protective habitat for benthic biota.
This watershed consist of high and moderate density housing, paved streets, sewage treatment plants as well as various businesses	Benner Bay forms a protective harbor that is of commercial importance
The mangrove lagoon acts as a natural barrier against shore erosion, flood and hurricane waves due to it's fringed shores.	Benner Bay is a site for small and large marinas as well as marina associated businesses
The coast configuration provides a protective anchorage for boats	Wastewater treatment in the Mangrove Lagoon-Turpentine Run drainage basin is provide five aging treatment plants
The only horse track on St. Thomas is within this watershed.	
Small docks scattered around Benner Bay are used by local fishermen	
A 10" ID portable water distribution main runs within the this watershed providing service to a number of customers and business	
The Bovoni landfill is within the watershed. This 15-18 acres landfill have collected solid waste for St. Thomas and St. John since 1992	
Most recreational activities centers around boating	
Most homes and businesses in the Mangrove Lagoon and Benner Bay are connected to septic tank/leach pit systems. Residents in the Tutu and Bovoni area are connected to a sewage collection system. Others especially those higher in the watershed use individual septic tank systems.	
The Mangrove lagoon is recognized as a prehistoric site as well as one rich in natural resources	

### **3.4.1.1 Identification of Issues**

- ❑ Public access to the shoreline is guaranteed under the Open Shoreline Act. However, public accessibility to the shoreline at the Mangrove Lagoon/ Benner Bay has been severely curtailed by commercial and private development in the area.
- ❑ Nutrient loading that impair water bodies are attributable to moored vessels at the Mangrove Lagoon and Benner Bay (Wernicke and Towle, 1983).
- ❑ Previous earth moving operations, administered in the watershed as a result of residential and commercial construction, has been a targeted contributor of sediment deposition.
- ❑ The four operable wastewater treatment plants in the Mangrove Lagoon/Turpentine Run drainage basin lack sludge handling facilities and is in repeatedly violation of their discharge permits producing odor and possible health hazards. These plants are scheduled to be replaced by the proposed Mangrove Lagoon Wastewater Treatment Facility.
- ❑ Waste from live-aboard vessels docked and moored within the watershed causes water quality issues.
- ❑ Since 1992, the 5- 18 acres Bovoni Landfil is the receiving site for all collected solid waste for St. Thomas and St. John. Due to the heavy volume of trash generated (2000 tons/day), this landfill is near capacity . An underground fire at the site continues to bum. The site is the repository for hazardous wastes including waste oils, household chemicals and hospital wastes. As a result, this waste leaches into the groundwater and eventually into the lagoon.
- ❑ The watershed is the site of a number of vehicle repair facilities. Some of the this facilities are licensed while other are not. These facilities are collection sites for waste lubricants, batteries, tires, etc. The marinas along Benner Bay are also collection sites for waste oil.
- ❑ Most the homes in the Mangrove Lagoon and Benner Bay area are connected to septic tank and leach pit systems. Businesses bordering the Mangrove Lagoon also use septic systems. Most of the residences built in Tutu and Bovoni are being connected to the sewage collection system. Others, especially higher in the watersheds, utilize individual septic tank systems.
- ❑ Approximately, one-third of the population of St. Thomas resides in the watershed. The combined watersheds support high and moderate density housing, with associated paved streets, sewage treatment plants, and a multitude of different businesses.

- Recreational activity within the watershed centers around boating.
- Air pollution has the potential to become an issue within the watershed during rare instances of westerly air flow, which can blow smoke and smells from the dump into the Mangrove Lagoon/Benner Bay area.
- In 1968, the horse racetrack was relocated to its present location adjacent to the lagoon. This operation involved filling in a mangrove vegetated delta and rerouting all the drainage entering the Turpentine Run into a single channel. This reduced the cleansing action of the tributaries resulting in a greater influx of sediment and pollutants into the lagoon.
- Major boating repair activity occur in Benner Bay . This operation involves the use of highly toxic chemicals including the resins used in fiberglass repair, lubricating oils and fuel additives used in boat engines and exceedingly toxic paints used on boats hulls that retard growth of algae and other bottom flowing organisms.

#### **3.4.1.2 Goal Setting**

##### *Benner Bay/Mangrove Lagoon*

Attempt to uphold, re-establish, and improve the natural appearance and traditional uses of the Mangrove Lagoon /Benner Bay ecosystem.

Monitor and plan future development in Benner Bay/Mangrove Lagoon watershed

Ensure that future development consider water-dependent uses of the limited undeveloped waterfront as opposed to development proposals.

Ensure that generated wastewater within the watershed is adequately treated.

Relocate the Bovoni Landfill to or make certain that this landfill come into compliance with EPA standards .

#### **3.4.1.3 Watershed Restoration Plan Development**

The goals and management practices of the Benner Bay watershed are listed in Table 7.

Table 7: Management Practices/Benner Bay/Mangrove Lagoon

Goal	Management Practices
<p><i>Goal 1</i>  <i>Attempt to uphold, re-establish, and improve the natural appearance and traditional us of the Mangrove Lagoon /Benner Bay ecosystem</i></p>	<p><i>-Enforce the Mangrove Lagoon Marine Reserve and Wildlife Sanctuary Rules and Regulation</i>  <i>-Implement CZARA requirements for marinas in the watershed.</i>  <i>-Dredge Benner Bay, if there will be little or no environmental degradation, to enhance vessel movement and access in the area.</i></p>
<p><i>Goal 2</i>  <i>Monitor and plan future development in Benner Bay/Mangrove Lagoon watershed</i></p>	<p><i>-Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903</i>  <i>-Enforce the Virgin Islands Zoning and Subdivision Law and Rules and Regulations</i>  <i>-Enforce Marine Reserve &amp; Wildlife Sanctuary Regs.</i>  <i>-. Determine boundary delineation to demarcate Mangrove restoration and Marina operation areas.</i>  <i>-Identify and map marine resources.</i></p>
<p><i>Goal 3</i>  <i>Ensure that future development consider water-dependent uses of the limited undeveloped waterfront as opposed to development proposals</i></p>	<p><i>-Enforce Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b), (1)</i></p>
<p><i>Goal 4</i>  <i>Ensure that generated wastewater within the watershed is adequately treated</i></p>	<p><i>-Enforce Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 906 (b) (5), (10)</i>  <i>-Enforce Virgin Islands Water Pollution Control Act, Title 12, Chapter 7, Section 186 et seq.</i>  <i>-Enforce Mooring and Anchoring of Vessels, Title 25, Chapter 16, Section 401-1 et. seq.</i>  <i>- Enforce Sanitation, Title 19, Chapter 53, Section 1404-72 et. seq.</i>  <i>-Enforce Wildlife and Marine Sanctuaries, Title 12, Chapter 1, Subchapter VII, Section 92-1 et. seq. – Construct and ensure efficient operation of the Mangrove Lagoon Wastewater Treatment Plant.</i></p>
<p><i>Goal 5</i>  <i>If feasible, relocate the Bovoni landfill or make certain that this landfill come into compliance with EPA standards</i></p>	<p><i>-Comply with the terms of EPA consent order</i>  <i>-establish enhanced DPNR monitoring</i></p>

**3.4.1.4 Watershed Restoration Plan Implementation**

The Department of Planning and Natural Resources will be the major regulatory agency as it relates to implementation of the action strategies as described in Table 8 below. Nonetheless, to ensure a favorable outcome, a cooperative partnership among local and private entities as well as the community will be developed.

Goal	Management Practices	Implementation Mechanism
<p><i>Goal 1</i>  <i>Attempt to uphold, re-establish, and improve the natural appearance and traditional us of the Mangrove Lagoon /Benner Bay ecosystem</i></p>	<p><i>-Enforce the Mangrove Lagoon Marine Reserve and Wildlife Sanctuary Rules and Regulation</i></p> <p><i>-Implement CZARA requirements for marinas in the watershed.</i></p> <p><i>-To enable vessel movement and entry and providing that there is little sign of degradation, dredge Benner Bay</i></p> <p><i>- Remove all abandoned vessels and debris from the watershed.</i></p>	<p><b>Enforce the Mangrove Lagoon Marine Reserve and Wildlife Sanctuary Rules</b></p> <p><i>-DPNR will enforce the rules and regulations promulgated for the protection of the designated marine reserves and sanctuaries and for the operation and development of marinas.</i></p> <p><i>- recruit additional officers to monitor development and to ensure compliance with applicable Rules and Regulations</i></p> <p><i>- Officers will become aware of this rules and regulation by means of a workshop conducted by the Coastal Zone Management Program.</i></p> <p><i>- A marine vessel will be purchased and equipped with the necessary tools to ensure effective implementation of watershed plans.</i></p> <p><b>Implement CZARA requirements for marinas in the watershed.</b></p> <p><i>Through the CZM permit application process, the Supplemental EAR Guidelines for Marina Development shall be implemented to ensure that all new applications for marinas shall address, as a minimum, the following:</i></p> <p><i>-design boat hull maintenance areas to minimize contaminant-laden runoff.</i></p> <p><i>-locate and design fueling station and maintenance areas so that spills can be contained in a limited area;</i></p> <p><i>-implement source control practices such as vacuuming of impervious areas; use of tarpaulins to collect paint chips, sanding, and paint drippings; and use of sanders with vacuum attachments to collect hull paint sanding;</i></p> <p><i>-design spill contingency plans; and design areas to include appropriate spill containment equipment.</i></p> <p><i>-Liquid materials (i.e. oil, solvents, antifreeze, paints, etc.) shall be prevented from entering coastal waters. Appropriate storage, transfer, containment, and disposal facilities shall be provided and maintained, and recycling of liquid materials (especially oil) encouraged. Possible practices to implement these goals include as a minimum:</i></p> <p><i>-build curbs, berms, or other spill containment barriers around areas used for liquid material storage. Store liquid materials in areas that are impervious to those materials;</i></p> <p><i>-separate containers for disposal of waste oil, waste gasoline, used antifreeze, and oil-contaminated water; diesel, kerosene, and mineral spirits containers should be clearly labeled, marina patrons and employees should be directed as to proper disposal methods for these materials through signs, mailings, training, etc.</i></p> <p><i>-The amount of fuel and oil from boat bilges and fuel tank air vents entering marina and coastal waters shall be minimized. Practices to implement this goal include as a minimum:</i></p> <p><i>-use the best available technology (BAT) on air vents or tank stems of fuel tanks to prevent fuel from overflowing through tank air vents and spilling into coastal waters; and place 'oil-absorbing materials in bilge areas of all boats with inboard engines; check these once a year and replace as necessary; recycle, if possible, or dispose of property.</i></p> <p><i>-Oil spill contingency plans are under preparation by both the V.I. Government (DPNR/DEP) and the U.S. Coast Guard. The DPNR/DEP currently awaits USEPA approval on a draft oil spill contingency plan.</i></p> <p><b>To enable vessel movement and entry and providing that there is little sign of degradation, dredge Benner Bay</b></p> <p><i>-As part of a collaboration between the Divisions of Fish and Wildlife, Environmental Enforcement and Coastal Zone Management of DPNR and the Virgin Islands Port Authority dredging of Benner Bay will occur and construction of a public dock. After an environmental impact assessment, activities will be undertaken pursuant to the Virgin Islands Coastal Zone Management Act.</i></p> <p><i>-The Virgin Islands Port Authority will determine the most feasible location for the public dock and the amount of dredging necessary to allow for safe navigation in the Bay. The Environmental Impact assessment the Environmental impact assessment will be conducted by DPNR, and provide funding for strategy implementation</i></p>

		<p><b>Remove all abandoned vessels and debris from the Watershed</b>  <i>-As a collaborate effort between DPNR, Public Works and the Antilitter and Beautification, debris and abandoned vessels from Benner Bay .</i>  <i>-This effort will also include a clean-up schedule</i></p>
<p>Goal 2  Monitor and plan future development in Benner Bay/Mangrove Lagoon watershed</p>	<p><i>-Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903</i>  <i>-Enforce the Virgin Islands Zoning, and Subdivision Law and Rules and Regulations</i>  <i>-Enforce Marine Reserve &amp; Wildlife Sanctuary Regs.</i>  <i>- Establish boundary delineation to demarcate Mangrove restoration and Marina operation areas.</i>  <i>-Identify and map marine resources.</i></p>	<p><b>Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b)</b>  <i>-DPNR will enforce the Coastal Zone Management Act to ensure public access and to regulate the type of uses that will be permitted in the watershed.</i>  <i>-All proposed development within the watershed shall be reviewed through the CZM permitting process to ensure consistency with the Coastal Land and Water Use Plan and the goals and policies of the Coastal Zone Management Act.</i></p> <p><b>Enforce the Virgin Islands Zoning and Subdivision Law and Rules and Regulations</b>  <i>-DPNR will enforce the Zoning and Subdivision Law to ensure that future development is within the permitted use designation. \</i>  <i>-Rezoning in the watershed shall not be permitted except where the applicant can clearly demonstrate that the rezoning would be consistent with the goals and policies of the CZMA and that the purpose for rezoning would have less environmental impact than any other feasible alternative, including no development.</i></p> <p><b>Enforce Marine Reserve &amp; Wildlife Regulations.</b>  <i>The Marine Reserve &amp; Wildlife Sanctuary regulations will be enforced to prevent the anchoring of boats without functioning sewage holding tanks, and to prevent any moorings in the Cas Cay/Mangrove Lagoon Marine Reserve and Wildlife Sanctuary. .</i></p> <p><b>Establish a boundary to delineate areas set aside for preservation as opposed to development</b>  <i>-DPNR will develop a map which shall demarcate a mangrove lagoon restoration area and the marina development/operation area. All future activities shall be permitted in accordance with this map which shall be required as a part of any CZM permit application for development in the Watershed..</i>  <i>As part of education and outreach, the Department of Planning and Natural Resources will develop a color map with effective signage and legends that clearly identifies the boundaries. In addition,, pamphlets which provide information about the watershed and the need for the boundary shall be produced and distributed.</i></p> <p><b>Identify and map marine resources</b>  <i>-DPNR/CZM will conduct a survey, in consultation and in collaboration with the Division of Fish and Wildlife, the Nature Conservancy, the University of the Virgin Islands and other resource institutions to identify and map marine resources within the watershed The map generated shall be used as a preliminary tool to help determine the feasibility of development activities within the watershed.</i></p>
<p>Goal 3  Ensure the future development consider water-dependent uses of the limited undeveloped waterfront as</p>	<p><i>-enforce the Virgin islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b), (1)</i></p>	<p><b>Enforce the Virgin islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b), (1)</b>  <i>-permit only water dependent development</i>  <i>-suitable land uses within watershed should be consistent with the Coastal Zone Management Act through the review process</i></p>

<p><i>opposed to developed proposals</i></p>		
<p><i>Goal 4 Ensure that generated wastewater within the watershed is adequately treated.</i></p>	<p><i>Enforce Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 906 (b) (5), (10)</i>  <i>-Enforce Virgin Islands Water Pollution Control Act, Title 12, Chapter 7, Section 186 et seq.</i>  <i>-Enforce Mooring and Anchoring of Vessels, Title 25, Chapter 16, Section 401-1 et. seq.</i>  <i>- Enforce Sanitation, Title 19, Chapter 53, Section 1404-72 et. seq.</i>  <i>-Enforce Wildlife and Marine Sanctuaries, Title 12, Chapter 1, Subchapter VII, Section 92-1 et. seq.</i>  <i>-Construct and effectively operate the Mangrove Lagoon Wastewater Treatment Plant.</i></p>	<p><b>Enforce Virgin islands Coastal Zone Management Act, Title 12 , Chapter 21, section 906 (b) (5), (10)</b>  <i>-DPNR –DEP nonpoint source program will provide financial assistance to assist homeowners with repairs and retrofitting needs.</i>  <i>-Educational material shall be distributed to inform residents of the importance of maintaining their OSDS systems, how such maintenance should be carried out, and the role of effective onsite sewage treatment in reducing the risks of bacterial contamination and eutrophication in the bays and salt ponds.</i>  <i>-DPNR will implement a schedule for the inspection of all sewage treatment systems and for the pumpout of in-ground systems.</i>  <i>- DPNR will deny permits for development and shall require connection to the Mangrove Lagoon Wastewater Treatment Facility or the use of an alternative system to treat sewage in areas where physical conditions prohibit the use of in-ground systems.</i>  <i>- DPNR shall establish standards for, and encourage the use of the constructed wetland- type biological systems until the waste water treatment facility is functioning adequately. (See attachment2)</i>  <b>Enforce Virgin Islands Water Pollution Control Act, Title 12, Chapter 7, Section 186 et seq.</b>  <i>-The operators of all package plants must obtain a TPDES permit from DPNR and abide by the condition. Inseption should be carried out and accurate records kept, to ensure efficient operation and timely maintenance.</i>  <b>Enforce Mooring and Anchoring of Vessels, Title 25, Chapter 16, Section 401-1 et. seq.</b>  <i>-Pumpout facilities are available for the public's use at the Crown Bay Marina in Crown Bay and the American Yacht Harbor in Redhook. Under the Clean Vessel Act of 1992, the University of the Virgin Islands, Marine Advisory Service is administering funds to purchase and operate a mobile raw sewage pump out station to serve recreational boats in different bays and mooring fields in the St. Thomas-St. John area. DPNR will conduct routine inspections to ensure use of the pumpout systems.</i>  <i>-A large visible sticker shall be issued to all boats that are moored, anchored in, or passing through, the watershed Each time a vessel's holding tank is pumped out the sticker would be stamped with the date and time. If the vessel had not had its holding tank pumped within a given length of time based on its size and carrying capacity, a citation would be issued by the enforcement officer.</i>  <b>-Enforce Sanitation, Title 19, Chapter 53, Section 1404-72 et. seq.</b>  <i>DPNR will strictly enforce the sanitation Code regarding the installation of septic tanks to ensure that these systems are designed and constructed according to current building and plumbing codes.</i>  <b>Construct and effectively operate the Mangrove Lagoon Wastewater Treatment Plant.</b>  <i>Construction of the Mangrove Lagoon Wastewater Treatment Plant will substantially reduce the release of pollutant to the Turpentine Run Drainage Basin and Mangrove Lagoon, mitigate the health hazards associated with partially treated wastewater as well as decrease the effect on natural flora and fauna in the lagoon</i></p>

<p><i>If feasible, relocate the Bovoni Landfill or make certain that this landfill come into compliance with EPA standards</i></p>	<p><i>-Comply with the terms of EPA consent order</i> <i>-Enhance DPNR monitoring</i></p>	<p><b>Comply with the terms of the EPA consent order which requires the DPW to do the following:</b>  <i>Ensure that hazardous waste is no longer delivered to the landfill.</i>  <i>Submit to EPA, a financial plan for carrying out the order.</i>  <i>Remove all hazardous material from the landfill.</i>  <i>Secure the landfill and keep it locked when not operating.</i>  <i>Remove and remediate contaminated soil</i>  <i>Develop a plan for putting out fires at the landfill.</i>  <i>Develop a plan for monitoring groundwater.</i>  <i>Develop a plan for the management of lead-acid batteries and used oil.</i>  <i>identify alternate disposal sites for lead-acid batteries and used oil</i>  <i>-The landfill will be covered with at least six inches of earth daily.</i>  <i>The Bovoni Landfill was designed only to handle household solid waste. Unfortunately, the disposal of lead-acid vehicle and marine batteries, and used oil are contained in the landfill. As a result, the landfill .has also suffered from inadequate ventilation which will continue to have serious negative effects if not addressed. A proposed order to clean up the landfill has been negotiated between the U.S. Environmental Protection Agency (EPA) and the Virgin Islands Government, execution of the consent order will require significant financial and human resources.</i>  <i>-The Department of Public Works shall establish a Solid Waste Task Force which shall consist of representatives from DPW, DPNR, Department of Health, Fire Service, EPA and the University of the Virgin Islands. This Task Force shall institute guidelines and a timeframes for the landfill to come into compliance with EPA mandates.</i>  <b>Establish Enhance DPNR monitoring.</b>  <i>-DPNR shall enact or revise a monitoring program for the Landfill to ensure compliance with EPA landfill standards. Copies of all monitoring reports from DPW and EPA will be reviewed by DPNR to ensure that there is no further degradation to the environment or potential for adverse health impacts. Pursuant to Superfund guidelines, if DPNR concludes that DPW is not progressing with compliance mandates in a timely manner and that the continued environmental degradation poses imminent threat to public health, then DPNR in concurrence with DPW shall request U.S. EPA to proceed with the clean-up of the landfill,</i></p>
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**3.4.1.5 Timeframe**

The time frame for attaining the goals described in the preceding section is provided in Table 9 below.

Table 9: Timeframe

Goal	Timeframe
<p><b>Goal 1</b>  <i>Enforce the Mangrove Lagoon Marine Reserve and Wildlife Sanctuary Rules and Regs.</i>  <i>Implement CZARA requirements for marinas in the Watershed.</i>  <i>Dredge Benner Bay, if there will be little or no environmental degradation, to enhance vessel movement and access in the area</i>  <i>Remove all abandoned vessels and other rubbish from the watershed.</i></p>	<p><i>Immediately</i> <i>Immediately</i></p>
<p><b>Goal 2</b>  <i>Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 2 1, Section 903 (b)</i>  <i>Enforce Marine Reserve &amp; Wildlife Sanctuary Regs.</i></p>	<p><i>Immediately</i> <i>Immediately</i></p>

<p><i>Establish boundary delineation to demarcate Mangrove restoration and Marina operation areas.</i></p> <p><i>Identify and map marine resources.</i></p> <p><i>Enforce Virgin Islands Coastal Zone Management Act, Title 12, Chapter 2 1, Section 903 (b), (1)</i></p>	<p><i>Immediately</i></p> <p><i>Immediately</i></p>
<p><b>Goal 3</b></p> <p><i>Enforce Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 906 (b) (5),</i></p>	<p><i>Immediately</i></p>
<p><b>Goal 4</b></p> <p><i>Enforce Virgin Islands Water Pollution Control Act, Title 12, Chapter 7, Section 136 et seq.</i></p> <p><i>Enforce Mooring and Anchoring of Vessels, Title 25, Chapter 16, Section 40 1 -1 et. seq. Immediately</i></p> <p><i>Enforce Sanitation, Title 19, Chapter 53, Section 1404-72 et. seq.</i></p> <p><i>Enforce Wildlife and Marine Sanctuaries, Title 12, Chapter 1, Subchapter VII, Section 92-1 et.-seq.</i></p> <p><i>Construct and effectively operate the Mangrove Lagoon Wastewater Treatment Plant.</i></p>	<p><i>Immediately</i></p> <p><i>Immediately</i></p> <p><i>Immediately</i></p> <p><i>Immediately</i></p>
<p><b>Goal 5</b></p> <p><i>Through Public Works comply with the terms of the EPA consent order</i></p> <p><i>Establish/Enhance DPNR monitoring.</i></p>	<p><i>3 years</i></p> <p><i>1 year</i></p>
<p><b>Evaluation</b></p>	<p><b><i>Annually</i></b></p>

### 3.4.2 Southshore Industrial Area

The Southshore Industrial Area (Bethlehem, HOVIC-STX, Alumina, Airport and Diamond) Watershed resources uses are summarized in Table 10

Table 10: Resource Uses

St. Croix’s main aquifer, Kingshill aquifer is within this watershed
Mangrove communities are scattered within the watershed where fish take refuge mainly along the shoreline from Manning Bay to the Alucroix Channel
The Billy French Pond is located within the watershed. This pond is classified as a major wetland and house many species of endangered birds including the Bahama Duck and Roseate Tern
St. Croix sewage pumping treatment facility with a primary sewage treatment plant and fourteen pump station
St. Croix municipal solid waste landfill, Anguilla landfill is located within the watershed
The HOVENSA oil refinery is located within the watershed
The ST. Croix Alumina Plant, the container port and airport is located within the watershed
The Flamboyant Racetrack is located within the watershed adjacent to the healthy mangrove shoreline
The VI Rum Industry is located within the watershed that discharge rum byproducts

through an outfall that terminated offshore
This watershed house Manning Bay which is the last relatively pristine mangrove lagoon on St. Croix includes a gut that is refuge for brackish aquatic species and large turtle seagrass beds offshore
This water house Ruth cay is a refuge for the endangered St. Croix Lizard ( <i>Ameriva polyops</i> ) and the only known nesting place for the White-crowned Pigeon
This watershed house the VIALCO Eastern Wetlands/Salt Flats is the best feeding site in the territory for the endangered Least Terns ( <i>Sterna albifrons</i> ) and the low Shoreline Cliffs East of the Billy French ponds is a nesting site for the White-tailed Tropicbird ( <i>Phaethon lepturus</i> )
From a historic aspect, a Colonial cemetery as well as three plantation era homesteads are located within the watershed on the VIALCO property .

#### **3.4.2.1 Identification of Issues**

- ❑ Contamination of groundwater from potential oil spill in the industrial area
- ❑ Nutrient loading of coastal waters from red mud produced at St. Croix Alumina as a by product of
- ❑ Sewage bypass from failing sewage treatment plant and pumping systems pump station into coastal waters
- ❑ As a result of coastal water which is used for industrial cooling and waste discharge experience sedimentation due to natural wind and wave result which stir shallow bottom silts Water quality with high turbidity and reduced oxygen level
- ❑ Degradation in water quality as a result of toxic VIRI rum effluent that have been found to contain elevated concentration of arsenic, cooper and zinc (EPA 1998 Toxicity Test)
- ❑ Aquatic flora and fauna that are affected by turbidity and sedimentation of coastal waters within the watershed
- ❑ Increase use of Ruth Cay which causes damage to important sea grass beds
- ❑ Sewage bypass into the Billy French Pond will result in major fish kill
- ❑ Loss of vegetation in salt flats possibility due to hypersalinity resulting from periodic discharge by HOVENSA of large volumes of seawater, surface runoff of herbicides from HOVENSA or Hovensa 1992 oil spill, altered hydrology as a result of upslope development VIALCO, which is a major bauxite processing plant discharges proceeded water in a series of cooling ponds .Algae bloom and suspended solids that comprise of trace of heavy metals are discharge into the marine environment through the Alucroix Channel.
- ❑ A main outfall at HOVENS which discharges treated stormwater and oily wastewater through several guts and drainage channels throughout the sea.
- ❑ The issue of air quality within the watershed

#### **3.4.2.2 Goal Setting**

- ❑ Improve the water quality of the Southshore Industrial Area
- ❑ Prevent contamination of Ground water

- Plan and manage future development in the watershed

### **3.4.2.3 Watershed Restoration Plan Development**

Management Practices to address the goals are outlined in Table 11

Table 11: Management Practices/Southshore Industrial Area

<b>Goal</b>	<b>Management Practices</b>
<i>Goal 1 Improve the water quality of the Southshore Industrial Area</i>	<ul style="list-style-type: none"> <li>-address chronic turbidity in coastal water within the watershed</li> <li>-address the issue of potential oil spills to coastal water within the watershed</li> <li>-address the issue of water quality</li> <li>address the issue of runoff from red mud tailing</li> <li>-address the rum outfall effluent at VIRIL</li> <li>-address the issue of sewage bypass form failing pump station</li> <li>-secure aquifer</li> <li>-protect the Mangrove population and salt pond</li> </ul>
<i>Goal 2 Prevent contamination of Ground water</i>	<ul style="list-style-type: none"> <li>-Meet new municipal solid waste landfill criteria</li> <li>-Ensure that the Anguilla landfill is EPA compliant</li> <li>-Educate the public</li> </ul>
<i>Goal 3 Plan and manage future development in the watershed</i>	<ul style="list-style-type: none"> <li>-Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b)</li> <li>-Enforce the Virgin Islands Zoning and Subdivision Law and Rules and Regulations</li> </ul>

### **3.4.2.4 Watershed Restoration Implementation**

Table 12 details how these management practices can be implemented.

Table 12: Implementation Mechanism

<p><i>Goal 1</i>  <i>Improve the water quality of the Southshore Industrial Area</i></p>	<p><i>-address chronic turbidity in coastal water within the watershed</i></p> <p><i>-address the issue of potential oil spills to coastal water within the watershed</i></p> <p><i>-address the issue of water quality</i></p> <p><i>address the issue of runoff from red mud tailing</i></p> <p><i>-address the rum outfall effluent at VIRIL</i></p> <p><i>-address the issue of sewage bypass form failing pump station</i></p> <p><i>secure aquifer</i></p> <p><i>-protect the Mangrove population and salt ponds</i></p>	<p><b>Address chronic turbidity in coastal water within the watershed</b>          -use siltation-curtain, wires and cascaded settling ponds on dredging and fill operation</p> <p><b>Address the issue of potential oil spills to coastal water within the watershed</b>          -enforce the Oil spill prevention and Pollution control; Act          -Implement oil spill reporting</p> <p><b>Address the issue of water quality</b>          -reduce nonpoint source pollution by <i>stormwater Management</i>  <i>-implement the proposed stormwater regulation upon legislative approval. This regulation addresses stormwater runoff, controls to protect water quality</i>          -Implement <i>Best Management Practices (See Attachment 3)</i>  <i>-through grants administered under section 319 of the clean water act, individual can receive funding to address nonpoint source pollution in the impaired watersheds in the territory</i></p> <p><b>Address the issue of runoff from red mud tailing</b>          -runoff from the red mud should be redirected into a separate settling basin with treatment for removal of trace of heavy metals prior to discharge</p> <p><b>Address the rum outfall effluent at VIRIL</b>          -additional effluent toxicity should be carried out          -lengthen the outfall and administered appropriate diffuser mechanism to become compliant with the Territory Water Quality Standards</p> <p><b>Address the issue of sewage bypass form failing pump station</b>          -through the department of Public Works ensure the progress with the repair of the Fig Tree Pump station          -the Fig tree Gut should be monitored and diverted from entering Billy French Pond in the event of a bypass          -become compliant with the Operation and Maintenance procedures for Municipal waste water treatment plants to ensure the TPDES requirement are met and the collection system is leak-proof and of sufficient capacity to handle peak loads          -proper training of operators for efficient operation, maintenance and replacement of equipment          -adopt the OSDS regulation upon legislative approval          -encourage the use wetland constructed type systems(see attachment 2).</p> <p><b>Secure aquifer</b>          -reduce stormwater runoff velocity through vegetation and designed structures</p> <p><b>Protect the Mangrove population and salt ponds</b>  <i>develop a Wetland Management Plan that addresses the development right of the wetland, zone changes to protect from future development, should be allowed for scientific or educational purposes</i></p>
<p><i>Goal 2 Prevent contamination of Ground water</i></p>	<p><i>-Meet new municipal solid waste landfill criteria</i></p> <p><i>-Ensure that the Anguilla</i></p>	<p><b>Meet new municipal solid criteria</b>  <i>-Establishment and maintenance of a protective berm(mounded soil with stabilizing vegetation) on the seaward side of the landfill.</i>  <i>-The exiting southern edge of the landfill should be pushed back a minimum</i></p>

<p>landfill is EPA compliant Educate the public</p>	<p>100 meters and future encroachment towards the coast strictly prohibited</p> <p><b>Ensure that the Anguilla landfill is EPA compliant</b> <b>Comply with the terms of the EPA consent order which requires the DPW to do the following:</b></p> <p>Ensure that hazardous waste is no longer delivered to the landfill. Submit to EPA, a financial plan for carrying out the order. Remove all hazardous material from the landfill. Secure the landfill and keep it locked when not operating. Remove and remediate contaminated soil Develop a plan for putting out fires at the landfill. Develop a plan for monitoring groundwater. Develop a plan for the management of lead-acid batteries and used oil. Identify alternate disposal sites for lead-acid batteries and used oil -The landfill will be covered with at least six inches of earth daily. The Bovoni Landfill was designed only to handle household solid waste. Unfortunately, the disposal of lead-acid vehicle and marine batteries, and used oil are contained in the landfill. As a result, the landfill has also suffered from inadequate ventilation which will continue to have serious negative effects if not addressed. A proposed order to clean up the landfill has been negotiated between the U.S. Environmental Protection Agency (EPA) and the Virgin Islands Government, execution of the consent order will require significant financial and human resources. -The Department of Public Works shall establish a Solid Waste Task Force which shall consist of representatives from DPW, DPNR, Department of Health, Fire Service, EPA and the University of the Virgin Islands. This Task Force shall institute guidelines and a timeframes for the landfill to come into compliance with EPA mandates.</p> <p><b>Established /Enhance Monitoring</b></p> <p><b>Educate the public</b> -Promote waste reduction through recycling and reuse -Promote the use of organic waste as fertilizers</p>	<p>100 meters and future encroachment towards the coast strictly prohibited</p> <p><b>Ensure that the Anguilla landfill is EPA compliant</b> <b>Comply with the terms of the EPA consent order which requires the DPW to do the following:</b></p> <p>Ensure that hazardous waste is no longer delivered to the landfill. Submit to EPA, a financial plan for carrying out the order. Remove all hazardous material from the landfill. Secure the landfill and keep it locked when not operating. Remove and remediate contaminated soil Develop a plan for putting out fires at the landfill. Develop a plan for monitoring groundwater. Develop a plan for the management of lead-acid batteries and used oil. Identify alternate disposal sites for lead-acid batteries and used oil -The landfill will be covered with at least six inches of earth daily. The Bovoni Landfill was designed only to handle household solid waste. Unfortunately, the disposal of lead-acid vehicle and marine batteries, and used oil are contained in the landfill. As a result, the landfill has also suffered from inadequate ventilation which will continue to have serious negative effects if not addressed. A proposed order to clean up the landfill has been negotiated between the U.S. Environmental Protection Agency (EPA) and the Virgin Islands Government, execution of the consent order will require significant financial and human resources. -The Department of Public Works shall establish a Solid Waste Task Force which shall consist of representatives from DPW, DPNR, Department of Health, Fire Service, EPA and the University of the Virgin Islands. This Task Force shall institute guidelines and a timeframes for the landfill to come into compliance with EPA mandates.</p> <p><b>Established /Enhance Monitoring</b></p> <p><b>Educate the public</b> -Promote waste reduction through recycling and reuse -Promote the use of organic waste as fertilizers</p>
<p>Goal 3 manage future development in the watershed</p>	<p><b>Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b)</b> DPNR shall enforce the Coastal Zone Management Act to ensure public access and to regulate the type of uses that will be permitted in the watershed . All proposed development within the watershed shall be reviewed through the CZM permitting process to ensure consistency with the Coastal Land and Water Use Plan and the goals and policies of the Coastal Zone Management Act.</p> <p><b>Enforce the Virgin Islands Zoning and Subdivision Law and Rules and Regulations</b> DPNR shall enforce the Zoning and Subdivision Law to ensure that future development is within the permitted use designation. Rezoning in the APC shall not be permitted except where the applicant can clearly demonstrate that the rezoning would be consistent with the goals and policies of the CZMA and that the purpose for rezoning would have less environmental impact than any other feasible alternative, including no development.</p>	<p><b>Enforce the Virgin Islands Coastal Zone Management Act, Title 12, Chapter 21, Section 903 (b)</b> DPNR shall enforce the Coastal Zone Management Act to ensure public access and to regulate the type of uses that will be permitted in the watershed . All proposed development within the watershed shall be reviewed through the CZM permitting process to ensure consistency with the Coastal Land and Water Use Plan and the goals and policies of the Coastal Zone Management Act.</p> <p><b>Enforce the Virgin Islands Zoning and Subdivision Law and Rules and Regulations</b> DPNR shall enforce the Zoning and Subdivision Law to ensure that future development is within the permitted use designation. Rezoning in the APC shall not be permitted except where the applicant can clearly demonstrate that the rezoning would be consistent with the goals and policies of the CZMA and that the purpose for rezoning would have less environmental impact than any other feasible alternative, including no development.</p>

### 3.4.2.5 Timeframe

Table 13 outlines the timeframe needed in implementing action strategies.

Table 13: Timeframe

<p>Goal 1</p> <ul style="list-style-type: none"> <li>-use siltation-curtain, wires and cascaded settling ponds on dredging and fill operation</li> <li>-enforce the Oil spill prevention and Pollution control; Act</li> <li>-Implement oil spill reporting</li> <li>-reduce nonpoint source pollution through stormwater Management</li> <li>-implement the proposed stormwater regulation upon legislative approval. This regulation addresses stormwater runoff, controls to protect water quality</li> <li>-Implement Best Management Practices (See Attachment 1)</li> <li>-through grants administered under section 319 of the clean water act, individual can receive funding to address nonpoint source pollution in the impaired watersheds in the territory</li> <li>-runoff from the red mud should be redirected into a separate settling basin with treatment for removal of trace of heavy metals prior to discharge</li> </ul> <ul style="list-style-type: none"> <li>-additional effluent toxicity should be carried out</li> <li>-lengthen the outfall and administered appropriate diffuser mechanism</li> <li>-to become compliant with the Territory Water Quality Standards</li> <li>-through the department of Public Works ensure the progress with the repair of the Fig Tree Pump station</li> <li>-the Fig tree Gut should be monitored and diverted from entering Billy French Pond in the event of a bypass</li> <li>-become compliant with the Operation and Maintenance procedures for Municipal waste water treatment plants to ensure the TPDES requirement are met and the collection system is leak-proof and of sufficient capacity to handle peak loads</li> <li>-proper training of operators for efficient operation, maintenance and replacement of equipment</li> <li>-adopt the OSDS regulation upon legislative approval</li> <li>-encourage the use wetland constructed type systems(see attachment 2).</li> <li>-reduce stormwater runoff velocity through vegetation and designed structures</li> </ul> <p>Develop a Wetland Management Plan that addresses the development right of the wetland,</p>	<p><i>Immediately</i></p> <p><i>Immediately</i></p> <p><i>3 years</i></p> <p><i>12 months</i></p> <p><i>Fiscal Year 2001</i></p> <p><i>6 months</i></p> <p><i>2 years</i></p> <p><i>1 year</i></p> <p><i>immediately</i></p> <p><i>immediately</i></p> <p><i>immediately</i></p> <p><i>immediately</i></p> <p><i>6 months</i></p> <p><i>12 months</i></p> <p><i>2 year</i></p> <p><i>1 year</i></p> <p><i>3 years</i></p>
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zone changes to protect from future development, should be allowed for scientific or educational purposes	
<p>Goal 2</p> <ul style="list-style-type: none"> <li>-Establishment and maintenance of a protective berm(mounded soil with stabilizing vegetation) on the seaward side of the landfill.</li> <li>-The exiting southern edge of the landfill should be pushed back a minimum of 100 meters and future encroachment towards the cost strictly prohibited</li> <li>-Ensure that the Anguilla landfill is EPA compliant</li> <li>-Promote waste reduction through recycling and reuse</li> <li>-Promote the use of organic waste as fertilizers</li> </ul>	<p><i>1 year</i></p> <p><i>1 year</i></p> <p><i>3 years</i></p> <p><i>1 year</i></p> <p><i>1 year</i></p>
<p>Goal 3</p> <p>-DPNR shall enforce the Coastal Zone Management Act to ensure public access and to regulate the type of uses that will be permitted in the watershed . All proposed development within the watershed shall be reviewed through the CZM permitting process to ensure consistency with the Coastal Land and Water Use Plan and the goals and policies of the Coastal Zone Management Act.</p> <p>-DPNR shall enforce the Zoning and Subdivision Law to ensure that future development is within the permitted use designation. Rezoning in the APC shall not be permitted except where the applicant can clearly demonstrate that the rezoning would be consistent with the goals and policies of the CZMA and that the purpose for rezoning would have less environmental impact than any other feasible alternative, including no development.</p>	<p><i>Immediately</i></p> <p><i>Immediately</i></p>
Evaluation	<i>Annually</i>

### 3.4.3 Fish Bay

Although not considered to be a high priority Category I watershed, the Fish Bay Watershed is included as a result of it's ecological sensitivity and it's land uses are addressed below. Additionally, a watershed management plan has already been developed pursuant to Section 6217 of CZARA which can serve as a model for other watersheds.

#### Land Uses

- Area of few development

- ❑ Contains Mangroves
- ❑ Contains salt ponds

**3.4.3.1 Identification of Issues**

There are a set of similar conditions in the watershed that are also applicable to St. Thomas and portions of St. Croix, namely:

- ❑ Rainfall on steep unpaved roads that leads to erosion
- ❑ Steep road that introduce sediments into Fish Bay
- ❑ Failing OSDS systems

**3.4.3.2 Goals**

- ❑ Reduce level of erosion
- ❑ Reduce the sedimentation in Fish Bay
- ❑ Reduce contamination from failing septic systems
- ❑ Maintain Mangrove population and salt pond

**3.4.3.3 Watershed Restoration Plan Development**

Table 14 addresses management practices essential in attaining goals for the Fish Bay Watershed.

Table 14: Management Practices/Fish Bay

<b>Goal</b>	<b>Management Practices</b>
Goal 2 Reduce the sedimentation in Fish Bay	<i>Implement Best Management Practices</i>
Goal 3 Reduce contamination from failing septic systems	<i>Improve failing OSDS by making a move toward Alternative OSDS</i>
Goal 4 Maintain Mangrove population and salt ponds	<i>Uphold the Mangrove and salt pond</i>

**3.4.3.4 Watershed Restoration Implementation**

Table 15 shows implementation mechanism for the Fish Bay Watershed.

Table 15: Implementation Mechanism

Goal 1 Reduce level of erosion	<i>-Nonpoint source Management -Implement Best Management Practices</i>	<b><i>Nonpoint source Management</i></b> <i>-stormwater Management -implement the proposed stormwater regulation upon legislative approval. This</i>
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		<i>regulation addresses stormwater runoff and controls to protect water quality</i> <b>Implement Best Management Practices</b> <i>(See Attachment 4)</i>
Goal 2 Reduce the sedimentation in fish Bay	<i>-Implement Best Management Practices</i>	<b>Implement Best Management Practices</b> <b>-See attachment 4</b>
Goal 3 Reduce contamination from failing septic systems	<i>-Improve failing OSDS by</i>	<i>Improve failing OSDS - make a move toward Alternative OSDS</i> <i>-see attachment 2</i> <i>-adopt and implement the proposed OSDS regulation upon legislative approval</i> <i>-educate citizens on proper OSDS maintenance</i>
Goal 4 Maintain Mangrove Population and salt ponds	<i>Maintain Mangrove population and salt ponds</i>	<i>Preserve mangrove and salt pond</i> <i>-develop a Wetland Management Plan that addresses the development right of the wetland, zone changes to protect from future development should be allowed for scientific or educational purposes</i>

**3.4.3.5 Timeframe**

The timeframe for Fish Bay’s implementation practices are addressed in Table 16.

Table 16: Timeframe

<i>Goal 1</i> <i>-stormwater Management</i> <i>-implement the proposed stormwater regulation upon legislative approval.</i> <i>Implement Best Management Practices</i> <i>-See Attachment 1</i>	<i>3 years</i> <i>12 months</i> <i>3 Years</i>
<i>Goal 2</i> <i>Implement Best Management Practices</i> <i>-See attachment 2</i>	<i>3 years</i>

<p><i>Goal3</i>  <i>Improve failing OSDS by making a move toward Alternative OSDS</i>  <i>-see attachment 2</i>  <i>-adopt and implement the proposed OSDS regulation upon legislative approval</i></p>	<p><i>3 years</i>  <i>12 months</i></p>
<p><i>Goal4</i>  <i>-develop a Wetland Management Plan that addresses the development right of the wetland, zone changes to protect from future development should be allowed for scientific or educational purposes</i></p>	<p><i>3 years</i></p>

#### **4.0 RESTORATION STRATEGY DEVELOPMENTAL COST**

The following constitutes funding sources that can be used in carry out various implementation strategies.

Table 17:Funding Sources

<i>The Sewage Waste Water Fund</i>	<i>The Virgin Islands Tax Assessor collects annual sewage assessment fees from wastewater systems along with the collection of annual property taxes. These revenues are given to DPW for use on sewage treatment plants.</i>
<i>Coastal Protection Fund</i>	<i>The Virgin Islands Coastal Protection fund , in accordance with the Oil Spill Prevention Act is established by DPNR s a revolving fund for implementing the provisions of this act. The fund is limited to one million dollars and includes license fees, and penalties.</i>
<i>Natural Resources Reclamation Fund</i>	<i>The Natural Resources Reclamation Fund, pursuant to the Coastal Management Act, is established to meet expenses incurred in the administration and enforcement of the requirements of this act. Funds include permits and other fines associated with this act</i>

Grants are an additional source of funding in an effort to satisfy the provision of the WRAS. The following constitutes grants that can be used for implementation purposes.

- DPNR/DEP CWA Section 319 - Nonpoint Source Management program provides funding to control nonpoint source pollution by implementing Best Management Practices.
- DPNR/VIMAS - Federal funds from programs such as the Clean Vessel Act can be obtained to improve marine water quality either through implementation of BMPs or monitor water quality along with other marine related projects.
- DPNR/CDBG – This is a community Development Block Grant that provides funding for a number of community based activities.
- VIRC&D – This Rural development Funds addresses projects that 1) support sustainable development of the local community 2) produce additional jobs, income or improve living conditions and 3) natural resource based projects involving forest resources or products.
- DPW – 10% of the Intennodal Surface Transportation Efficiency Act (ISTEA) must be set aside for runoff pollution control enhancements. The ISTEA of 1991 established the Surface Transportation Program (STP), which is a block program that may be used for any roads that are not functionally classified as local or rural minor collectors. Each state must set aside 10% percent of its allocated STP funds for transportation enhancements, which include pedestrian and bicycle facilities, acquisition of scenic easements and scenic or historic sites or historic highway programs, landscaping and other scenic beautification, historic preservation, rehabilitation and operation of historic transportation buildings and facilities, preservation of abandoned railway corridors, control and removal of outdoor advertising, and archaeological planning and research. Wetland mitigation and banking projects are also eligible for funding.
- DPNR – The Environmental Justice Small Grants Program provides financial to eligible community groups (i.e., community-based/grassroots organizations, churches, or other non-profit organizations) to carry out projects to address environmental justice issues.

## **5.0 POLICIES**

There are a specified regulation that will aid in the implementation of management strategies outlined in the WRAS. The include Federal as well as Territorial statutes. The following summarize the various regulations as they relate to this document

### **5.1 Federal Statutes**

Table 18 outlines the various federal Policies need for implementing management strategies

Table 18: Federal Statutes

<b>Legislation</b>	<b>Description</b>
<i>Coastal Barrier Resources Act of 1982, as amended (CBRA), 16 U.S. C. §350] et seq.</i>	<i>The CBRA promote adequate use and conservation of coastal barriers along the Atlantic, Gulf, and Great Lakes coastlines.</i>
<i>Coastal Zone Management Act of 1972, as amended (CDM), 16 US.C §§145] el seq.</i>	<i>The CZMA provides incentives for coastal states to effectively manage, protect and develop their coastal zones consistent with Federal Standards and goals. In order to receive Federal approval, a coastal zone management plan must: -identify the coastal zone boundaries define the permissible land and water uses within the coastal zone that have a direct and significant impact and identify the State's legal authority to regulate these uses. -inventory and designate areas of particular concern -provide a planning process for energy facilities -provide a planning process to control and decrease shoreline erosion; and provide for an effective coordination and consultation mechanism between regional , State and local agencies.</i>
<i>Coastal Zone Act Reauthorization Amendments of 1990</i>	<i>This is a Federal requirement that coastal states with federally approved coastal zone management plans prepare, and submit for Federal approval, coastal nonpoint source pollution control programs. CZMA §6217, 16U.S.C. § 1455b. The coastal nonpoint source pollution programs expand the nonpoint source pollution programs developed under section 319 of the Clean Water Act (CWA) by including land and water uses affecting coastal waters.</i>
<i>Magnusson Fishery Conservation and Management Act (MFCMA), 16 U.S.C. §180,, et seq.</i>	<i>The MFCMA afford for the conservation and management of all fishery resources between three and two hundred nautical miles (5.6and370km) offshore. Fishery management plans (FMPs) developed under this authority establish the levels of commercial and sport fishing consistent with achieving and maintaining the optimum yield of each fishery.</i>
<i>National Historic Preservation Act (7VHPA), 16 US. C. 470 et seq.</i>	<i>The NHPA authorizes the Secretary of the Interior to maintain a National Register of "districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture." Federal agencies conducting, licensing or assisting in an undertaking that may affect a listed site or a site that is eligible for listing must Provide the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed action before any action is taken.</i>
<i>Clean Water Act (CWA), 33 U.S. C. § 1251 et</i>	<i>The CWA. Establishes the restoration and maintaining</i>

<p><i>seq.</i></p>	<p><i>of the chemical, physical, and biological integrity of the nation's waters. The CWA regulates discharges from known sources and discharges of harmful quantities of oil and hazardous substance discharges. In addition, this Act control the disposal of vessel sewage and dredged material. The EPA administers the National Pollutant Discharge Elimination System (NPDES). Under the NPDES program, a permit is required for the discharge of any pollutant from a point source into the navigable waters of the United States. In 1987, the CWA was amended to include the nonpoint source (NPS) program.</i></p>
<p><i>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.</i></p>	<p><i>CERCLA, allows for Federal and State agencies classify hazardous waste sites and prioritize response. CERCLA gives the federal government with the authority to respond to releases of hazardous substances, remediate sites, and seek reimbursement from the potentially responsible parties (PRPs).</i></p>
<p><i>River and harbors Act (R[-L4), 33 U.S. C §40] et seq.</i></p>	<p><i>Under section 10 of the RHA unauthorized obstruction of the navigable waters of the United State is unlawfull. Moreover, the construction of any structure or the excavation or fill in the navigable waters of the United States is prohibited without a permit from the ACOE. Section 13 prevents the discharge of refuse and other substances into navigable waters.</i></p>
<p><i>Water Resources Development Act (WRDA) of 1974, §22</i></p>	<p><i>Under section 22 of the WRDA the ACOE is authorized to cooperate with the Commonwealth of Puerto Rico and the U. S. Virgin Islands in the preparation of plans for the development, utilization, and conservation of water and related land resources of drainage basins and coastal area of the islands. The Section 22 program intends to provide ACOE planning expertise to assist comprehensive water resource planning efforts being done by the States.</i></p>
<p><i>Public Law (PL) 84-99</i></p>	<p><i>Under PL 84-99, The Chief of Engineers is permitted to assume activities including disaster preparedness, advance measures, emergency operations, rehabilitation of flood control works threatened or destroyed by flood, protection or repair of Federally authorized shore protection works threatened or damaged by coastal storms; and providing emergency supplies of clean water in cases of drought or contaminated water supply. In post-flood response activities, the Corps provides temporary construction and repair to essential public utilities and facilities and emergency access for a 10-day period, at the request of a Governor.</i></p>
<p><i>Public Law (PL) 93-288 (the Stafford Act) as amended</i></p>	<p><i>Under the Stafford Act and Federal Disaster Response Plan, the Corps of Engineers has a standing mission assignment to provide public works and engineering</i></p>

	<p><i>support in response to a major disaster or catastrophic earthquake. Under this plan, the Corps will work directly with the State in providing temporary repair and construction of roads, bridges and utilities, temporary shelter, debris removal and demolition, water supply, etc.</i></p>
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## 5.2 Territorial Statutes

Table 19 focuses on Territorial policies for implementation.

Table 19: Territorial Policies

<b>Legislation</b>	<b>Description</b>
<p><i>The Virgin Islands Coastal Zone Management Act, Title 12 VIC Section 910, et. seq.</i></p>	<p><i>The intent of the CZM Program is to treat coastlines as unique places where conservation and special types of development should have priority</i>  <i>A CZM permit is required for any development activity in the first tier of the coastal zone. Minor permit applications are internally reviewed by DPNR staff and the permit is approved or denied by the commissioner of DPNR. Major permit applications are reviewed by DPNR staff circulated for comment among interested public agencies and presented at public hearings. The CZM commission for the appropriate district denies, approves or approves the permit with conditions.</i></p> <p><i>Violation of permits result in the issuance of a Notice of Violation and Assessment (NOVA) Which can ultimately result in revocation of the permit or a fine. A Certificate of Occupancy is issued after a final inspection is conducted and the development is not in any violation of the permit.</i></p>
<p><i>Protection of Indigenous Endangered and Threatened Fish, Wildlife and Plants Title 12 P7C, Chapter 2</i></p>	<p><i>This legislation is intended to protect, conserve, and manage indigenous fish, wildlife and plants, and endangered or threatened species for the ultimate benefit of all Virgin Islanders now and in the future. A permit or license is required from the Commissioner of DPNR before any cutting, hunting or taking of specimen may occur. Failure to obtain a permit can result in a fine or imprisonment</i></p>
<p><i>Navigation, Motorboats. To regulate the operation of Motorboats, Personal Watercraft and other Thrill craft Operations, VIRR title 25, Chapter 15</i></p>	<p><i>The purpose of these rules and regulations is to reduce conflicts among ocean users, promote safe boating and protect submerged aquatic vegetation through the establishment of operations areas, restricted areas and prohibited areas. Effectiveness of this legislation is dependent upon the availability of enforcement officers to monitor for violations. An operator permit is required from DPNR before a person can rent any motorized vessel, watercraft or water sports equipment. Civil penalties are assessed by the commissioner of DPNR by Notice of Violation and Assessment.</i></p>
<p><i>The Oil Spill Prevention</i></p>	<p><i>This legislation prohibits the discharge of oil, petroleum products or their by-</i></p>

<p><i>and Pollution Control Act, VIC Title 12 Chapter 17</i></p>	<p><i>products, and other pollutants into or upon any coastal waters, estuaries, tidal flats, beaches and land adjoining the seacoast of the territory. AN license will be issued by DPNR if the applicant has shown that they controlling pollution related to oil, petroleum and by product and that in the event of discharge, abatement measures are applied Licenses are issued on an annual basis. Operation of a terminal facility without a terminal facility license is prohibited. Any violation of this legislation is punishable by a civil penalty of up to \$50,000 to be assessed by DPNR.</i></p>
<p><i>Solid, Hazardous Waste Management Act, PYC, Title 19 Chapter 56</i></p>	<p><i>The purpose of this legislation is to provide for the proper storage, transportation, and disposal of solid and hazardous wastes in the Virgin Islands, to promote and facilitate, wherever possible, the recycling of solid waste products, and resource conservation and recovery, to educate the public on the need for, and to impose upon all persons the duty of contributing to public cleanliness and appearance in order to promote the public health, safety and welfare and to protect the economic and aesthetic interests of the people of the Virgin Islands Any person violating any provision of the chapter can incur a minimum fine of \$ 1 0.00 and a maximum fine of \$250.00. Penalties are not significant enough to deter violations. Additionally, a citation can only be issued if the violation occurs in the presence of the peace officer. However, willful noncompliance or violation of permits can result in fines of up to 5,000 for each day of noncompliance and more for subsequent violations</i></p> <p><i>Any person engaged in the generation, storage, transportation, treatment, disposal or recovery of hazardous wastes shall obtain a permit therefor from the Department of Planning and Natural Resources. Whenever any person is apprehended for any violation of the Solid and Hazardous waste chapter, a citation known as a litter ticket may be issued and a fine levied on the violators. If the violation was committed from a motor vehicle, boat or aircraft, a lien may be placed against same until the fine is paid</i></p>
<p><i>The Water Pollution Control Act, VIC Title 12, Chapter 7</i></p>	<p><i>The Virgin Islands Water Pollution Control Program (WPCP) falls under the Virgin Islands Department of Planning and Natural Resources (DPNR), Division of Environmental Protection (DEP). The WPCP is comprised of the Ambient Monitoring Program (AMP), the Territorial Pollutant Discharge Elimination Systems (TPDES) Program and the Ground Water Program (GWP).</i></p> <p><i>The AMP was established to evaluate coastal water quality by performing regular scheduled sampling of monitoring stations located in coastal waters around the three main islands - St. Croix St. Thomas and St. John. This program utilizes a network of 64 stations around St. Croix, 57 around St. Thomas and 19 around St. John . Most sites are sampled on a quarterly basis, however, several sites on St. Thomas, due to their remoteness ,are sampled on a semi-annually basis.. AMP data collected by DEP is recorded and stored in files in the St. Thomas and St. Croix offices. This water quality data is not transferred to the national Storet system on a regular basis because DEP has not established a reliable computer link to the mainframe computer at EPA Region If offices in New York.</i></p> <p><i>The TPDES Program issues permits for point-source discharges into waters of the Virgin Islands. These regulated discharges include sewage treatment plant outfalls (both public and private facilities), brine discharges from reverse osmosis (and other technology) fresh water production plants, industrial facility process water discharges, industrial facility drainage discharge, etc. Permittees are required to keep a hard-bound ledger of effluent flow and limits at the site for inspection. Additionally, depending on the facility and the nature</i></p>

	<p><i>of the discharge, the permittee is required to submit to DEP monthly or quarterly discharge monitoring reports (DMR). Exceedences reported in the DMRs trigger the issuance of a letter of warning or a Notice of Violation to the permittee.</i></p> <p><i>A TPDES permit is required for all point-source discharges into waters of the Virgin Islands. Enforcement options within VIC, Title 12, Chapter 7 include injunctive, civil and criminal proceedings against the perpetrator(s). Civil penalties of up to \$ 10,000 per day for documented discharge may be levied against the perpetrator by the Commissioner of the Department of Planning and Natural Resources. Criminal proceedings, upon conviction present a fine of not less than \$2,500 to not more than \$25,000 per day of violation. If the conviction constitutes a repeat offense, the maximum fine may be up to \$50,000 per day of violation.</i></p>
<p><i>Zoning and Subdivision Law, Title 29, Chapter 3</i></p>	<p><i>The Subdivision Laws of the Virgin Islands have played a major role in the development of the Territory and are now a mainstay of the development process. Currently, the Department of Planning and Natural Resources has a draft Subdivision Regulations which is intended to be integrated into the proposed Virgin Islands Development Law. New subdivision regulations have provided greater control on developments which shape the character of environmentally sensitive areas and require a greater amount of on-site facilities. Additionally, new subdivision regulations require that land be dedicated for public facilities, parks and schools. If the Subdivision Laws of the Virgin Islands are continued, there will probably be three areas that will be considered for amendments in order to address growing community needs and concerns:</i></p> <ol style="list-style-type: none"> <li><i>1. Requiring that certain level of subdivisions be considered as major permits;</i></li> <li><i>2. Requiring that greater amount of land be dedicated for public facilities;</i></li> <li><i>3. Attaching some kind of impact assessment to permitted subdivision;</i></li> <li><i>4. Availability of enforcement mechanisms</i></li> </ol> <p><i>As part of the permitting process for development, applicants must provide site maps to verify the location of the development. If a development is not properly zoned, as determined by the commissioner of DPNR, the development permit will be denied. The Commissioner must also approve requests for subdivisions of four or more parcels of land.</i></p>
<p><i>Trees and Vegetation Adjacent to Watercourses, VICC Title 12, Chapter 3</i></p>	<p><i>This legislation prevents the cutting or injuring of any tree or vegetation within 30 feet of the center of any natural watercourse, or within 25 feet of the edge of such watercourse, whichever is greater. This legislation lacks adequate enforcement. Anyone wishing to cut or injure a tree must obtain written permission from the commissioner of DPNR.</i></p>
<p><i>Air Pollution Control Act, V" C' Title 12, Chapter 9, Subchapters 204 and 206</i></p>	<p><i>This legislation provides for the regulation of discharges into the atmosphere from any facility issued a permit under the provisions of said chapter. The program's effectiveness is based upon permits issued. Not all members of the community voluntarily seek a permit for equipment that will produce emissions</i></p>

	<p><i>to the atmosphere. Without a permit it is difficult for the Department to determine what emissions are produced. Once a permit is issued, the Department is able to monitor and ensure compliance with the permits. A permit to operate and/or an authority to, construct is required before any air contaminants may be released into the atmosphere.</i></p>
<p>Sewage Disposal, 7-title 19, Chapter 55</p>	<p><i>This legislation provides for the proper design and connections to the Public Sewer System. The Department of Public Works shall ensure that no stormwater from pavements, areaways, roofs or other sources be permitted to the sanitary sewers which are designed to be used exclusively as carriers of domestic sewage and suitable industrial wastes. Permits are required from the Department of Public Works before any connection can be made to the public sewer.</i></p>
<p><i>Mooring and anchoring of Vessels and houseboats Act of 1990 Subchapters 401 to 410 Title 25, Chapter 16 VIR&amp;C</i></p>	<p><i>The purpose of this legislation is to provide for the orderly, efficient, equitable, safe and ecologically sound allocation and regulation of mooring, anchorages, and unobstructed navigational channels in the territorial waters of the United States Virgin Islands through the designation of mooring and anchoring areas, identification of prohibited activities and other conditions as set forth in the legislation. Mooring areas are monitored by enforcement officers to ensure compliance with permit conditions. This program has proven effective but can be significantly improved by an increase of enforcement officers to patrol and make the necessary inspections.</i></p> <p><i>Mooring permits are issued by DPNR and must be renewed annually. A mooring permit must be kept on the vessel and be available for inspection at all times; a mooring decal, ' issued as part of the permit must be displayed on the vessel. Noncompliance with conditions of the permit may result in the issuance of a NOVA, or revocation of the permit.</i></p>
<p><i>Flood Damage Prevention Rules &amp; Regulations, Title 3, Chapter 22, Subchapter 40-1 (b) (15)</i></p>	<p><i>The Flood Damage Prevention Rules and Regulations were established to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. A Flood Plain Determination and Permit application is a required submittal for all development activities in the VI. The program is effectively administered through the Department of Planning and Natural Resources Permitting program. Without approval from the Flood Plain Manager, a permit for development cannot be issued. A Flood Zone Permit is issued by DPNR to demonstrate compliance with the Flood Damage and Prevention Regulations.</i></p>
<p><i>Antiquities and Cultural Properties Act of 1998.</i></p>	<p><i>The Antiquities and Cultural Properties Act of 1997 complements the National Historic Preservation Act in protecting and managing the Territory's terrestrial and marine historical, cultural and archaeological resources for the benefit of the people of the United States Virgin Islands. The Virgin Islands State Historic Preservation Officer (VISHPO) is responsible for administering the state historic preservation program and for implementing the National Historic Preservation Act. This law is effectively enforced at least through the review of applications for development. Before any land clearing or excavation activities can occur, a permit must be obtained from the VISHPO</i></p>

	<p><i>which would ensure that development will be in accordance with the Antiquities and Cultural Properties Act of 1998 and the National Historic Preservation Act. The VISHPO issues or denies permits for use, access to, and development of property containing historic, cultural or archaeological resources, and for the excavation or removal of any archaeological specimen for cultural exchange, scientific identification or any other purpose.</i></p>
<p><i>Zoning and Subdivision Law, Title 29, Chapter 3, Section 281</i></p>	<p><i>This legislation was created for the conservation and preservation of historic and cultural assets. No building or structure, including stone walls, fences, paving and steps, may be erected, reconstructed, altered, restored, moved or demolished within any Historic and Architectural Control District without first being approved by the Virgin Islands Historic Preservation Commission (HPC). The Virgin Islands State Historic Preservation Officer (VISHPO) provides technical and general assistance to applicants wishing to obtain approval from the HPC for federally funded projects. Upon submittal of an application, the HPC reviews the application and notifies the applicant as well as the Department of Planning and Natural Resources of its determination. If the HPC is satisfied with the stated measures to comply with the goals and policies of this act then approval is granted and the applicant may proceed to obtain other necessary permits from DPNR. If the HPC is not satisfied with the measures outlined then the application is denied and once again DIINR and the applicant are notified. The applicant must take the necessary steps to modify the application in accordance with recommendations from the HPC to receive approval before any additional permits can be obtained from DPNR. For the duration of the project, inspections are made on behalf of HPC to ensure compliance with the issued permit. Violations are reported to the Historic Preservation Commission who would then take actions to ensure compliance. The coordinated effort among DPNR, HPC and the VISHPO is very successful in conserving and preserving the historic and cultural assets of the Virgin Islands. A determination letter from the Historic Preservation Commission must be submitted to the Commissioner of DPNR before any DPNR permits will be granted for activities in the Historic District. Failure to comply with conditions of permits would result in a notice of violation which may result in a fine.</i></p>
<p><i>Sanitation, Title 19, Chapter 53, Division 8</i></p>	<p><i>This legislation provides for the design and construction of sewage collection systems with standards for corrosion protection, allowable sewer pipe leakage, capacity, velocity of flow, location and water tightness of manholes, sewage pumping stations and pumps. Additionally there are requirements for power supply, quality of effluent, Bypasses and other related factors. Provided that funding is available, there seems to be no problem with building the systems to specification. Various permits are required from the Department of Planning and Natural Resources for construction of the facility. Permits are also required for placement of the discharge pipe and for the quality of effluent being discharged.</i></p>
<p><i>Environmental Protection, Title 12, Chapter 13</i></p>	<p><i>The Environmental Protection Law is applicable to all land clearing activities in the second tier of the coastal zone but with the exception of agricultural activities. Agricultural activities must be approved by the commissioner of DPNR. This legislation requires that before any real property is cleared, graded, filled or otherwise disturbed for any purpose or use including, but not limited to, the erection of any building or structure, the quarrying of stone or the construction of roads and streets, an earth change plan shall be approved by DPNR. Upon approval of the Earth Change Plan an Earth Change Permit</i></p>

	<p><i>is issued to the applicant. The Earth Change Permit is required before a building or other permit shall be issued to the applicant by DPNR. Upon the start of the activity for which an Earth Change Permit has been issued, the owner of the property shall notify the designated earth change officer who will schedule inspections that may be deemed necessary for the effective enforcement of the provisions of this law. The inspector maintains records of inspections made, notices issued and actions taken by property owners pursuant to notices resulting from inspections. Any violations of the issued permit could result in a stop work order until the violation is corrected or may be prosecuted by the Attorney General. The two major problems preventing the effective implementation of the Environmental Protection Law lie in DPNR not being able to retain sufficient inspectors to adequately inspect all construction sites in a timely manner and follow up to ensure that problems or violations are corrected. Secondly, the procedure which currently exists for prosecution by the attorney General is very labor intensive and often times the violator proceeds with his development to completion before the matter can be addressed by the Attorney General. Agricultural activities are exempted from requiring Earth Change Plans. An Earth Change Permit must be obtained and a sign shall be posted at the construction site in clear view of the general public to display the Earth Change Permit number. Inspectors and others could easily identify a project based on the number and report violations to be acted upon by the designated inspector. When there is a violation of the permit, a Stop Work Order is issued specifying the problem and the actions that should be taken to correct it.</i></p>
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## 5.2 Proposed Statutes

Table 20 addresses proposed statutes for implementation.

Table 20: Proposed Status

<i>Legislation</i>	<i>Description</i>
<i>Virgin Islands Development Law</i>	<i>The proposed Comprehensive Land and Water Use Plan will establish a system for effectively managing and utilizing land and water resources</i>
<i>Revised Coastal Zone Management Act</i>	<i>This legislation will eliminate the two-tier system of permitting that currently exist and establish a single tier system. This will allow for more effective management of natural resources since all development in the near shore coastal zone or upland will be regulated under CZMA.</i>
<i>Stormwater Regulation</i>	<i>This legislation is currently awaiting legislative approval. It is the intent of the legislation to 1) prevent contamination of surface water and ground water by uncontrolled and untreated stormwater runoff and 2) regulate land uses that permit uncontrolled or untreated stormwater runoff</i>
<i>OSDS Regulation</i>	<i>This legislation is currently undergoing public</i>

	<i>comment. This legislation intends to address both conventional and alternative OSDS.</i>
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## 6.0 COMMUNITY INVOLVMENT

Community involvement is an essential part of carry out the management strategies of the WRAS. An essential component is education and outreach. Through public outreach the community can participate in implementation strategies. Education can be administered in various school. As students become aware they will get parents involved.

Through land acquisition, once a suitable area is identified for preservation, the area may be acquired along with the development rights-conservation easements - restrictions put on property that legally restrict the present and future use of the land. Land trusts - may be established as publicly or privately sponsored nonprofit organizations with the goal of holding lands or conservation easements for the protection of habitat, water quality, recreation or scenic value. The effectiveness of the land acquisition program is determined by the size of the parcel and the difference between redevelopment and post-development pollutant loading rates. The acquisition and preservation of these areas can be extremely important to water quality protection and decrease the cost of maintenance. Although this might not be a feasible solution for the Virgin Islands Government, community groups can organize themselves into nonprofit organizations and solicit grants from various federal agencies to acquire necessary lands.

### 6.1 Lead Supporting Entities

DPNR through the Coastal Zone Management Act is the lead agency for the implementation of the WRAS. The Coastal Zone Management Act will be enforced to improve and re-establish the overall value of the environment in the watershed, encourage economic development, guarantee priority for coastal-dependent development, present inexpensive and varied public recreational opportunities, preserve coastal water quality and support public participation in decisions affecting coastal planning conservation and development. Moreover, This act will ensure that ecologically significant resource areas are conserved for their contribution to marine productivity and value.

The following agencies shall be responsible for the following activities in this watershed:

- ❑ Virgin Islands Port Authority will be responsible for all construction, repairs and maintenance of docks, bulkheads, wharfs and other facilities under its jurisdiction, as well as all dredging activities.
- ❑ Department of Public Works will address all construction, repair and maintenance of roads, roadsides, sidewalks and parking facilities; all trash removal and beautification of the watershed. All repairs

and maintenance of sewer systems, outfall pipes etc. Public transportation

- Department of Housing Parks and Recreation will be accountable for the establishment and maintenance of parks and recreational areas and facilities, minimize conflicts between user groups.
- ST. Thomas-St. John Environmental Association will continue to voluntarily report environmental concerns, violation of development permits and continue to promote environmental awareness in the community.
- The Private Sector will develop the watershed in accordance with permits issued and shall establish a taskforce to ensure that development in the watershed is harmonious and cognizant of the goals of the watershed.
- St. Thomas-St. John Fisheries Advisory Committee will continue to monitor trends in fishing resources and make recommendations to DPNR for improved habitats.

## **7.0 EVALUATION**

The above mentioned action strategies will be continually monitored and evaluated. If the actions are found to be unsuccessful, changes to strategies should be implemented to assure the impairment within each watershed is addressed