USVI Integrated Water Quality Monitoring & Assessment Report

Department of Planning & Natural Resources

Division of Environmental Protection

Water Quality Management Program

2016

The 2016 USVI Integrated Water Quality Monitoring & Assessment Report intends to satisfy the USVI requirements of the Federal Clean Water Act Sections 305(b) and 303(d).

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I. EXECUTIVE SUMMARY

A. Purpose

The 2016 US Virgin Islands Integrated Water Quality Monitoring and Assessment Report was prepared by the Department of Planning and Natural Resources, Division of Environmental Protection (DPNR-DEP) and is intended to satisfy abbreviated reporting requirements under section 305(b) of the Federal Clean Water Act (CWA). This report also is intended to satisfy the requirements of section 303(d) of the Federal CWA by developing a list of assessment units that will require Total Maximum Daily Loads (TMDLs). This report provides an assessment of the water quality conditions of the Virgin Island's surface and ground water resources for the period covering fiscal year 2014 and fiscal year 2015 (October 1, 2014 through September 30, 2015).

B. Overview of Water Quality Conditions and Trends

Water quality in the US Virgin Islands is generally good but declining due to an increase in point and non-point source discharges into the marine environment. Sources such as direct discharges, stormwater run-off and vessel wastes increase stresses on US Virgin Islands (VI) waters.

1. Surface Water

Non-point source pollution is the major source of surface water contamination in the Virgin Islands. Non-point source pollution can be attributed to several causes such as:

- Failure to properly install effective silt control devices during construction,
- Failure to contain storm water run-off from unpaved roads,
- Failure of on-site disposal systems (OSDS).

The discharging of wastes overboard directly into the sea by boat owners and the difficulty in regulating such activity also contributes to non-point source pollution problems seen in the US

Virgin Islands. Point Source Pollution can be attributed to an antiquated municipal sewage system. Poor preventive maintenance practices due to lack of funding and other resources within the Waste Management Authority result in "bypasses" that result in the release of untreated sewage directly into the waters of the US Virgin Islands. The Government of the US Virgin Islands has made considerable progress towards resolving these issues by the upgrading of new treatment plants and upgrading other portions of the municipal system.

2. Ground Water

- The primary sources of groundwater contamination in the US Virgin Islands are:Bacteriological contamination from failing septic systems
- Leaking municipal sewer lines
- Migration of contamination from previous injections and disposal practices
- Frequent sewage bypasses (generally described as discharges direct to the sea, but with some percolation into sub-soils)

Other sources of ground water contamination include intrusion of salt water caused by the over-pumping of the aquifers, invasion of volatile organic compounds (VOC's), contamination from leaking underground storage tanks, and the indiscriminate/illegal discharges of waste.

C. Program Initiatives

Under the provisions of the Federal and Local Water Pollution Control Act, the US Virgin Islands Water Pollution Control (WPC) and Water Quality Management (WQM) Programs are mandated to conserve, protect, preserve, and improve the quality of water for public use, and the propagation of wildlife, fish and aquatic life for the USVI. To ensure the preservation of water quality WQM projects monitor compliance with the Water Quality Standards as set forth in the US Virgin Islands Environmental Laws and Regulations.

In addition, the program-reporting period (FY2014 and FY2015) saw water quality management activities in the US Virgin Islands being planned for integration for management and reporting purposes with the Unified Watershed Assessment process of the Clean Water Action Plan. This US Virgin Islands Water Quality Assessment presents water quality assessment information in a format that preserves the US Virgin Islands long-term data series by using the same water quality monitoring sites. This report also indicates how these data can be summarized at a level that is compatible for both Water Quality Assessment and Unified Watershed Assessment processes.

The report classified these watersheds into 4 different categories, as follows:

Category 1 - Watersheds in Need of Restoration

These watersheds do not currently meet, or face imminent threat of not meeting, clean water and other natural resource goals.

Category 2 - Watersheds Meeting Goals but Needing Preventative Action to Sustain Water Quality.

These watersheds meet clean water and other natural resource goals and standards and support healthy aquatic systems. All such watersheds need the continuing implementation of core clean water and natural resource programs to maintain water quality and conserve natural resources.

Category 3 - Watersheds with Pristine/Sensitive Aquatic System Conditions on Lands Administered by Federal, State or Tribal Governments.

The USVI Territory works cooperatively with federal land managers to identify watersheds with exceptionally pristine water quality, other sensitive aquatic system conditions, and drinking water sources that are located on lands administered by federal or local governments. These areas include currently designated and potential candidate Wilderness Areas, Outstanding Natural Resource Waters, and Wild and Scenic Rivers.

Category 4 - Watersheds With Insufficient Data to Make an Assessment.

These watersheds lack significant information, critical data elements, or the data density needed to make a reasonable assessment at this time.

The Government of the Virgin Islands is presently enhancing and strengthening its territorial Water Pollution Control Act and revising its Water Quality Standards. The triennial review will be completed when the revised Water Quality Standards are adopted in the later part of FY2018. This ongoing process builds upon previous 305(b) and 303(d) reporting periods.

D. Summary of Classified Uses

USVI waters are classified into three (3) groups based on designated uses: Class A, B. and C:

Class A waters are for the preservation of natural phenomena requiring special conditions with existing natural conditions that shall not be changed. Conditions for Class A waters cannot be altered except towards natural conditions. Class A water standards are the most stringent of the three (3) classes because of its pristine or near-pristine state.

Class B and C waters are designated for maintenance and propagation of desirable species of aquatic life (including threatened, endangered and indigenous species) and primary contact recreation.

Class C waters have less stringent water quality standards than Class B.

Detailed specifications for these classes are presented in Part II, Section B, below.

All waters of the Virgin Islands are designated for fish consumption, aquatic life support, primary contact recreation, and secondary contact uses pursuant to the Virgin Islands Water

Quality Standard, Title 12, Chapter 7, §186-1 of the Virgin Islands Rules and Regulations

(VIRR).

E. Highlights of the Rest of this Report

- Part III, Table III.C.1 has been updated to reflect the current classification of all US Virgin Islands assessment units.
- Part III, 2016 Assessment Methodology has been updated.

II. BACKGROUND

A. Resource Overview

The territory of the United States Virgin Islands comprises three major islands: St. Croix, St. John and St. Thomas. Additionally, 57 smaller islands and cays were documented in *A Natural History Atlas to the Cays of the US Virgin Islands* (Thomas and Devine, 2005). Taken together, the territory encompasses a total land area of about 136 square miles or 110,000 acres (Table II.A.1) characterized by central mountain ranges and relatively small coastal plains. Peak elevations are 1,165 feet on St. Croix (Mount Eagle), 1,550 feet on St. Thomas, (Crown Mountain) and 1,297 feet on St. John (Bordeaux Mountain). The islands are generally only 2 to 6 miles wide, with no land location far from the coastal waters. All data in this report focus on the main islands of St. Croix, St. John, and St. Thomas although several enclosed bays within the main islands' watersheds include offshore islands and cays.

The return of Water Island to the control of the Government of the US Virgin Islands, after 50-some years of direct federal administration (first as a fort by the Department of the Army during the Second World War, and later as the responsibility of the US Department of the Interior) raises the question of whether this area should be treated as a fourth island. For the purposes of the Water Quality Assessment, Water Island will be treated as another offshore cay or small inhabited island, such as Hassel Island or Great St. James because the area is small (less than 600 acres or 1 square mile), and because the island is practically within St. Thomas Harbor.

The offshore cays and small islands are an inherent piece of the natural heritage of the Virgin Islands. Additionally, as an economic asset, these offshore sites could be included within a broad eco-tourism program for the territory. Many government-owned cays have already been established as wildlife reserves pursuant to Title 12 § 94(b)(2) VI Rules and Regulations. A number are important seabird nesting sites, and several are important roosting areas. The surrounding waters of most of the cays and islands teem with marine life, providing food for seabirds and for the fish and shellfish sought by commercial and recreational fishermen. They are also popular dive sites, which are important to the local diving industry.

There are no large freshwater lakes or ponds, and no perennial streams on any of the islands; intermittent streams can only be seen after heavy rainfall or during the rainy season (May – November). The absence of large freshwater resources and perennial streams means that guts (watercourses) form the basis for watershed management in the territory.

This Water Quality Assessment is based on the United States Geological Survey (USGS) 8-digit Hydrologic Units for the US Virgin Islands, which designate two Virgin Islands watersheds: one for St. Croix, and one for the combined islands of St. Thomas and St. John.

In addition, this Water Quality Assessment also uses 11- and 14-digit Hydrologic Unit definitions, in the process of being finalized by the US Geological Service of the US Department of Interior and the Natural Resources Conservation Service of the US Department of Agriculture, to define territorial *Watersheds*. Within these fourteen draft watersheds (seven on St. Croix, four on St. Thomas, and three on St. John), the Virgin Islands have defined waterbody *Assessment Units*, which correspond to coastal elements of watersheds.

Table II.A.1 Characteristics of Virgin Islands Watersheds and Islands

	St. Croix	St. Thomas	St. John	Total
Population	50,600	51,634	4,170	106,404
Land Area (square miles)	84	32	20	136
Land Area (acres)	53,499	17,489	12,323	83,311
Tidal/sub-tidal wetlands (square miles)	2.5	2.4	1.1	5.9
Coastal Shoreline	70.3	52.8	49.7	172.8
Embayments (square miles)	1.5	0.9	0.1	3.5

Figure II.A.1 St. Croix subwatersheds and assessment unit overview

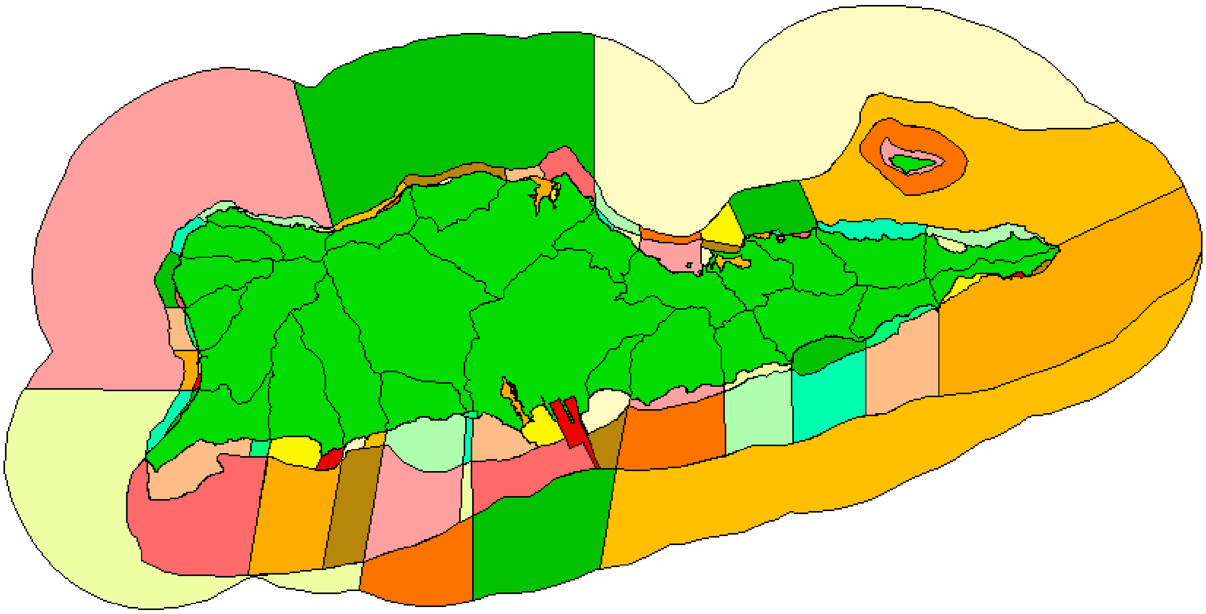
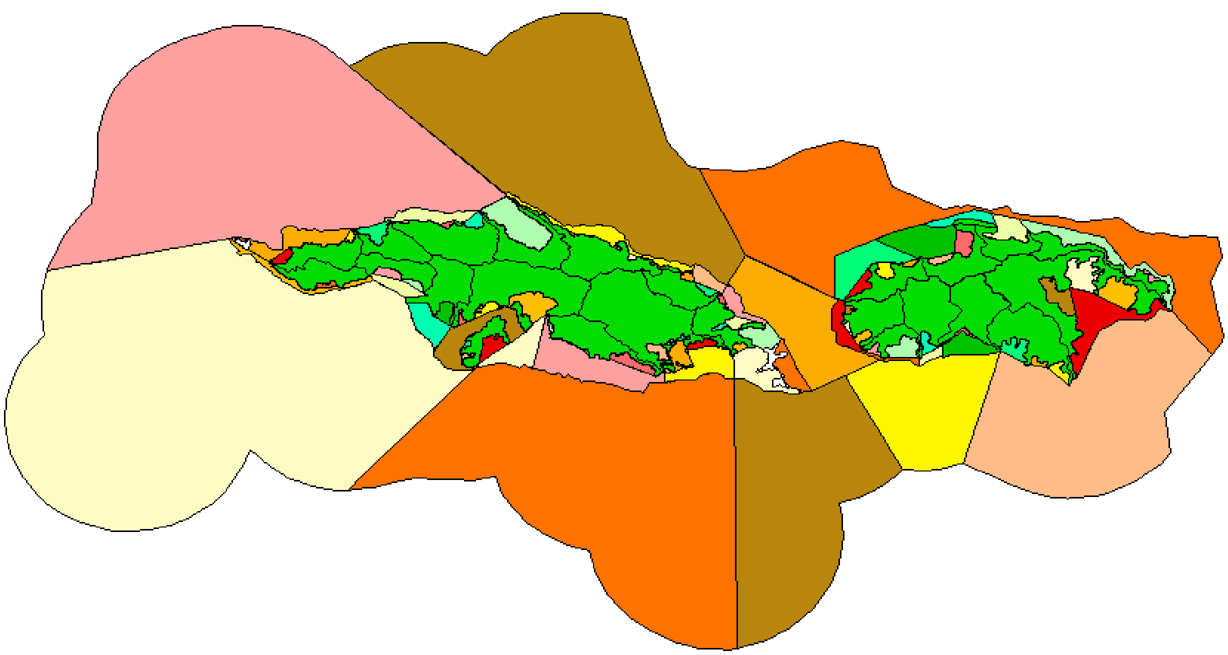


Figure II.A.2 St. Thomas/St. John subwatersheds and assessment unit overview



The 14-digit Hydrologic Unit delineations are to be integrated with the list of watersheds used for the analysis in the Unified Watershed Assessment: See Part III below.

Table II A.2 Sub-watersheds Listed in the Unified Watershed Assessment (UWA)

St. Croix

Watershed Name	Acres	UWA Category	Watershed Name	Acres	UWA Category
A. Northside	2,258		N. Bugby Hole	998	2
B. Baron Bluff	1,262	4	O. Cane Garden Bay	1,527	2
C. Salt River Bay	3,510	2	P. HOVENSA	7,642	1
D. Princess	2,182		Q. Bethlehem	6,689	1
E. Christiansted	1,225	1	R. Airport	1,654	1
F. Altoona Lagoon	1,239		S. Diamond	2,577	1
G. Southgate	1,597	1	T. Long Point Bay	2,044	2
H. Solitude	1,691	4	U. Sandy Point	2,735	4
I. Teague Bay	1,061		V. La Grange	3,137	2
J. Turner Hole	711		W. Prosperity	967	4
K. Madam Carty	1,128		X. Creque Dam	703	
L. Great Pond Bay	2,007	1	Y. Butler Bay	918	
M. Laprey Valley	1,853		Z. Rams Bay	757	
Total St. Croix Acres 54,072					

St. Thomas

Watershed Name	Acres	UWA Category	Watershed Name	Acres	UWA Category
A. Botany Point	945	4	H. Benner Bay	3,666	1
B. Santa Maria Bay	867	4	I. Frenchman Bay	1,137	
C. Dorothea Bay	1,861	4	J. St. Thomas Harbor	2,696	1
D. Magens Bay	1,210	1	K. Cyril E. King Airport	1,524	4
E. Mandahl Bay	1,883		L. Preseverance Bay	704	
F. Smith Bay	902		M. Fortuna Bay	707	
G. Redhook Bay	850	1			
Total St. Thomas 18,952					

St. John

Watershed Name	Acres	UWA Category	Watershed Name	Acres	UWA Category
N. Hawksnest	1,305		S. Great Lameshur Bay	1,545	3
O. Maho Bay	1,116	3	T. Genti (Reef) Bay	1,208	3
P. Leinster Bay	795		U. Fish Bay	1,503	1
Q. Minnebeck Bay	629	3	V. Rendezvous Bay	416	
R. Coral Bay	3,003		W. Great Cruz Bay	529	1
			X. Mary Point	110	
St. John Total Acres 12,159					

These watersheds align closely with the larger 14-digit Hydrologic Units drafted by the USGS and the NRCS.

The alignment is as follows:

Table II.A.3 Alignment of 14-Digit HUCs and Watersheds

8-Digit	11-Digit	14-Digit	Name	Acres
21020002			**St. Croix Watershed**	**54,072**
	21020002010		**North St. Croix**	**22,507**
		21020002010010	Northwest St. Croix	6,482
			V. La Grange	3,137
			W. Prosperity	967
			X. Creque Dam	703
			Y. Butler Bay	918
			Z. Rams Bay	757
		21020002010020	Northcentral St. Croix	7,030
			A. Northside	2,258
			B. Baron Bluff	1,262
			C. Salt River Bay	3,510
		21020002010030	Northeast St. Croix	8,995
			D. Princess	2,182
			E. Christiansted	1,225
			F. Altoona Lagoon	1,239
			G. Southgate	1,597
			H. Solitude	1,691
			I. Teagues Bay	1,061
	21020002020		**South St. Croix**	**31,565**
		21020002020010	Southeast St. Croix	8,224
			J. Turner Hole	711

			K. Madam Carty	1,128
			L.. Great Pond Bay	2,007
			M. Laprey Valley	1,853
			N. Bugby Hole	998
			0. Cane Garden Bay	1,527
		21020002020020	Southparts St. Croix	7,642
			P. HOVIC-VIALCO	7,642
		21020002020030	Airport St. Croix	8,343
			Q. Bethlehem	6,689
			R. Airport	1,654
		21020002020040	Southwest St. Croix	7,356
			S. Diamond	2,577
			T. Long Point Bay	2,044
			U. Sandy Point	2,735
21020001			**St. Thomas-St. John Watershed**	
	21020001010		**St. Thomas**	**18,952**
		21020001010010	Northwest St. Thomas	4883
			A. Botany Point	945
			B. Santa Maria Bay	867
			C. Dorothea Bay	1,861
			D. Magens Bay	1,210
		21020001010020	Northeast St. Thomas	3,635
			E. Manual Bay	1,883
			F. Smith Bay	902
			G. Redhook Bay	850
		21020001010030	Southeast St. Thomas	4,803

		H. Benner Bay	3,666
		I. Frenchman Bay	1,137
	21020001010040	Southwest St. Thomas	5,631
		J. St. Thomas Hobart	2,696
		K. Cyril E King Airport	1,524
		L. Preseverance Bay	704
		M. Fortuna Bay	707
21020001020		**St. John**	**12,049**
	21020001020010	North St. John	3,845
		N. Hawksnest	1,305
		0. Maho Bay	1,116
		P. Leinster Bay	795
		Q. Minnebeck Bay	629
	21020001020020	Southeast St. John	4,548
		R. Coral Bay	3,003
		S. Great Lameshur Bay	1,545
	21020001020030	Southwest St. John	3,656
		T. Genti (Reef) Bay	1,208
		U. Fish Bay	1,503
		V. Rendezvous Bay	416
		W. Great Cruz Bay	529

Finally, these two systems are displayed with an indication of the monitoring stations associated with each assessment unit and the number of water quality monitoring sites (Battelle, 2003) established by the US Virgin Islands Department of Planning and Natural Resources.

Table II.A.4 Assessment Units, Square Miles and Monitoring Sites

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STT-01	Botany Bay	B	0.1576	STT-9 Botany Bay
VI-STT-02	Stumpy Bay	B	0.0597	STT-10 Stumpy Bay
VI-STT-03	Botany Bay subwatershed, offshore	B	1.309	There are currently no monitoring stations within this assessment unit.
VI-STT-04	Santa Maria Bay	B	0.3617	STT-11 Santa Maria Bay
VI-STT-05	Caret Bay	B	0.0266	STT-12 Caret Bay
VI-STT-06	Neltjeberg Bay	B	0.0562	STT-13 Neltjeberg Bay
VI-STT-07	Dorothea	B	0.0254	STT-13B Dorothea
VI-STT-08	Hull Bay	B	0.2049	STT-14 Hull Bay, VI616865 Hull Bay
VI-STT-09	Dorothea Bay subwatershed, offshore	B	0.7673	There are currently no monitoring stations within this assessment unit.
VI-STT-10	Magens Bay	B	1.6208	STT-15, STT-15A, STT-15B Magens Bay, VI672756 Magens Bay
VI-STT-11	Northwest St. Thomas HUC14, offshore	B	55.088	STT-OFF1 STT NW-1, STT-OFF9 STT NW-3
VI-STT-12	Lovenlund Bay	B	0.0228	There are currently no monitoring stations within this assessment unit.
VI-STT-13	Mandahl Bay (Marina)	B	0.0131	STT-16B Mandahl Bay Entrance, STT-16C Mandahl Point Entrance
VI-STT-14	Tutu Bay	B	0.0414	There are currently no monitoring stations within this assessment unit.
VI-STT-15	Sunsi Bay	B	0.0152	STT-17B Sunsi Bay

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STT-16	Spring Bay	B	0.0102	STT-17A Spring Bay
VI-STT-17	Mandahl Bay subwatershed, offshore	B	1.1379	STT-16A Mandahl Bay, STT-18 Coki Point Bay , VI577932 Coki Point
VI-STT-18	Water Bay	B	0.0845	STT-19 Water Bay, VI591668 Water Bay
VI-STT-19	Smith Bay	B	0.1187	STT-20 Smith Bay, VI431925 Lindquist Beach
VI-STT-20	Smith Bay subwatershed, offshore	B	0.4103	There are currently no monitoring stations within this assessment unit.
VI-STT-21	St. John Bay	B	0.0411	STT-21A St. John Bay, VI327776 Sapphire Beach
VI-STT-22	Red Bay	B	0.0078	STT-21B Red Bay
VI-STT-23	Vessup Bay	B	0.0619	STT-22B Vessup Bay, USGS-50263000 Vessup Bay West
VI-STT-24	Red Hook Bay	B	0.1772	STT-22A Red Hook Bay, USGS-50263500 Vessup Bay East, VI764950 Vessup Bay
VI-STT-25	Great Bay	B	0.5593	STT-23 Great Bay, VI505006 Bluebeards Beach
VI-STT-26	Red Hook Bay, offshore	B	0.4725	There are currently no monitoring stations within this assessment unit.
VI-STT-27	St. James Islands, offshore	B	0.6691	There are currently no monitoring stations within this assessment unit.
VI-STT-28	Cowpet Bay	B	0.0757	STT-24 Cowpet Bay, STT-24A Cowpet Bay West
VI-STT-29	St. James Bay	B	1.2439	There are currently no monitoring stations within this assessment unit.

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STT-30A	Northeast St. Thomas HUC14, offshore north	B	42.927	There are currently no monitoring stations within this assessment unit.
VI-STT-30B	Northeast St. Thomas HUC14, offshore south	B	24.908	There are currently no monitoring stations within this assessment unit.
VI-STT-31	Nazareth Bay	B	0.1793	STT-25B Secret Harbour, STT-26, STT-26A Benner Bay, VI389422 Secret Harbor
VI-STT-32	Jersey Bay, offshore	B	1.2925	STT-25 Nazareth Bay
VI-STT-33	Benner Bay	B	0.4187	USGS-50265900 Benner Bay South; EPA recommends developing a monitoring and assessment strategy for this assessment unit that includes active monitoring of this site.
VI-STT-34	Benner Bay Lagoon Marina	B	0.0355	STT-27D Mangrove Lagoon, Near LaVida Marina, STT-27E Mangrove Lagoon, Near Compass Point, USGS-50265700 Benner Bay North
VI-STT-35	Mangrove Lagoon	B	0.2931	STT-27A Mangrove Lagoon, Near Treatment Plant, STT-27B Mangrove Lagoon, Off Sanitary Landfill (East of EcoTours), STT-27C Mangrove Lagoon, Near Tropical Marine Fuel Dock, USGS-50278800 Mangrove Lagoon West, USGS-50278500 Mangrove Lagoon East
VI-STT-36	Frenchman Bay subwatershed, east	B	0.3532	STT-28A Bovoni Bay,STT-28B Bolongo Bay, VI951607 Bolongo Bay
VI-STT-37	Frenchman Bay	B	0.0195	STT-29A Frenchman Bay, VI891065

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
				Frenchman's Bay
VI-STT-38	Limetree Bay	B	0.0065	STT-29B Limetree Bay, VI776527 Limetree Bay
VI-STT-39	Morningstar Bay	B	0.0215	STT-30 Morningstar Bay, VI937158 Morningstar Bay
VI-STT-40	Pacquereau Bay	B	0.0453	STT-31A Flamboyant Cove
VI-STT-41	Frenchman Bay subwatershed, offshore	B	2.9233	There are currently no monitoring stations within this assessment unit.
VI-STT-42	Southeast St. Thomas HUC14, offshore	B	50.939	STT-OFF8 STT South-3, STT-OFF5 STT North2
VI-STT-43	St. Thomas Harbor, inner	C	0.7495	STT-31B Hassel Island, Off Navy Dock, STT-31C Hassel Island, Careening Cove, STT-32A Long Bay, Near South Dolphin, STT-32B Long Bay, Northeast Corner, STT-33A Long Bay, Off Outfall, STT-33B Long Bay, Off Outfall, STT-34 Long Bay, Off Pump Station, STT-35 Groden Bay, STT-36 St. Thomas Harbor, North of Coast Guard Dock, STT-37 St. Thomas Harbor, Cay Bay, STT-38 Haulover Cut
VI-STT-44	St. Thomas Harbor, outer	B	1.2128	There are currently no monitoring stations within this assessment unit.
VI-STT-45	Gregerie Channel	B	1.7072	STT-1 Crown Bay, Near Outfall, STT-39 Water Isle, East Gregorie Channel
VI-STT-46	Sprat Bay	B	0.3814	STT-42 Water Island Sprat Bay
VI-STT-47	Hassel Island at Haulover Cut to	C	0.2074	STT-2 Crown Bay, Near Tamarind Outlet, STT-3 Subbase

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
	Regis Point			
VI-STT-48	Water Isle Hotel, Beach	B	0.0057	There are currently no monitoring stations within this assessment unit.
VI-STT-49	Druif Bay	B	0.0331	STT-40 Water Isle Hotel, Beach
VI-STT-50	Flamingo	B	0.061	STT-41 Water Island Flamingo Bay
VI-STT-51	Krum Bay	C	0.0754	STT-4 Krum Bay
VI-STT-52	Lindbergh Bay	B	0.2612	STT-5A Lindbergh Bay East, STT-5B Lindbergh Bay West, STT-5C WAPA Outfall, VI514102 Lindberg Bay
VI-STT-53	Cyril E. King Airport subwatershed, offshore	B	0.8499	STT-6C S.W. Road, Near Red Point Outfall
VI-STT-54	Perseverance Bay, offshore	B	0.4734	STT-6B College Cove
VI-STT-55	Brewers Bay	B	0.1076	STT-7A Brewers Bay, VI293962 Brewer's Bay
VI-STT-56	Perseverance Bay	B	0.2114	STT-7B Perseverance Bay
VI-STT-57	Fortuna Bay	B	0.0827	STT-8 Fortuna Bay
VI-STT-58	Fortuna Bay subwatershed, offshore	B	0.6553	There are currently no monitoring stations within this assessment unit.
VI-STT-59	Northwest St. Thomas HUC14, offshore	B	77.71	STT-6A Airport Runway, STT-OFF2 STT NW-1, STT-OFF11 STT SW-4
VI-STJ-01	Caneel Bay	B	0.2623	STJ-54 Caneel Bay, NPS-1 Caneel Bay, VI658467 Caneel Beach

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STJ-02	Hawksnest Bay	B	0.2246	STJ-44B Hawksnest Bay, NPS-3 Hawksnest (middle beach), NPS-4 Hawksnest (Gibney Beach), VI255380 Oppenheimer
VI-STJ-03	Trunk Bay	A	0.0685	STJ-44A Trunk Bay, NPS-5 Trunk Bay
VI-STJ-04	Hawksnest Bay subwatershed, offshore	B	1.7287	NPS-2 Henley Cay
VI-STJ-05	Cinnamon Bay	B	0.1456	STJ-44C Cinnamon Bay, NPS-6 Peter Bay, NPS-7 Cinnamon Bay
VI-STJ-06	Maho Bay/Francis Bay	B	0.346	STJ-44D Francis Bay, NPS-8 Maho Bay, NPS-9 Francis Bay, VI536165 Big Maho Bay
VI-STJ-07	Maho Bay subwatershed, offshore	B	1.6071	There are currently no monitoring stations within this assessment unit.
VI-STJ-08	Mary Point	B	0.4831	There are currently no monitoring stations within this assessment unit.
VI-STJ-09	Leinster Bay	B	0.6627	NPS-10 Leinster Bay
VI-STJ-10	Minnebeck Bay	B	1.4876	NPS-11 Haulover Bay, NPS-30 Newfoundland Bay, NPS-31 Haulover East
VI-STJ-11	Newfound Bay	B	0.0765	There are currently no monitoring stations within this assessment unit.
VI-STJ-12	North St. John HUC14, offshore	B	23.719	There are currently no monitoring stations within this assessment unit.
VI-STJ-13	Coral Harbor	B	0.6965	STJ-56 Johnson Bay, STJ-53 Coral Bay, NPS-15 Coral Bay Dock, NPS-16 Johnson Bay, VI823989 Johnson's Bay

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STJ-14	Hurricane Hole	B	0.7689	NPS-13 Water Creek, NPS-14 Princess Bay
VI-STJ-15	Round Bay	B	0.6015	STJ-57 Round Bay
VI-STJ-16	Coral Bay	B	2.2337	STJ-58 Privateer Bay, NPS-12 Long Point
VI-STJ-17	Salt Pond Bay	B	0.1978	STJ-52 Salt Pond Bay, NPS-17 Salt Pond Bay
VI-STJ-18	Grootman Bay	B	0.1046	There are currently no monitoring stations within this assessment unit.
VI-STJ-19	Great Lameshur Bay	B	0.359	STJ-51 Great Lameshur Bay, STJ-50 Little Lameshur Bay, NPS-18 Great Lameshur Bay, NPS-19 Yowsi Point, NPS-20 Little Lameshur Bay
VI-STJ-20	Southeast St. John HUC14, offshore	B	24.319	There are currently no monitoring stations within this assessment unit.
VI-STJ-21	Genti Bay, nearshore	B	0.0947	STJ-49 Genti Bay, NPS-21 Reef Bay
VI-STJ-22	Genti Bay, offshore	B	0.769	There are currently no monitoring stations within this assessment unit.
VI-STJ-23	Fish Bay	B	0.2103	STJ-48 Fish Bay, NPS-22 Fish Bay
VI-STJ-24	Fish Bay subwatershed, offshore	B	0.1824	There are currently no monitoring stations within this assessment unit.
VI-STJ-25	Rendezvous Bay	B	0.4677	STJ-47 Rendezvous Bay, NPS-23 Rendezvous Bay, VI204627 Klain Bay, VI402599 Hart Bay
VI-STJ-26	Chocolate Hole	B	0.1004	STJ-46 Chocolate Hole, NPS-24 Chocolate Hole,VI391298 Chocolate Hole

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STJ-27	Rendezvous Bay subwatershed, offshore	B	0.1863	There are currently no monitoring stations within this assessment unit.
VI-STJ-28	Great Cruz Bay	B	0.1396	STJ-45 Great Cruz Bay. NPS-25 Great Cruz Bay, VI779192 Great Cruz Bay
VI-STJ-29	Turner Bay/Enighed Pond	B,	0.057	STJ-55 Turner Bay, NPS-26 Turner Bay
VI-STJ-30	Cruz Bay	B	0.0674	STJ-43A Cruz Bay, North, STJ-43B Cruz Bay, South, STJ-43C Cruz Bay, North of Seaplane Ramp, STJ-43D Cruz Bay Creek North, NPS-27 Cruz Bay (ferry dock), NPS-28 Cruz Bay (airplane ramp), NPS-29 Cruz Bay (NPS dock), VI309453 Cruz Bay
VI-STJ-31	Great Cruz Bay watershed, offshore	B	0.5775	VI456779 Frank Bay
VI-STJ-32	Southwest St. John HUC14, offshore	B	10.142	There are currently no monitoring stations within this assessment unit.
VI-STJ-33	Pillsbury Sound	B	6.9399	STJ-OFF13 STJ West-4
VI-STC-01	Frederiksted, south	B	0.0451	There are currently no monitoring stations within this assessment unit.
VI-STC-02	Frederiksted Harbor	C	0.035	STC-28 Frederiksted Pier, STC-29 Frederiksted Public Beach, VI970611 F'sted (Fst. Target)
VI-STC-03	Lagrange subwatershed,	B	0.375	There are currently no monitoring

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
	offshore			stations within this assessment unit.
VI-STC-04	Prosperity, nearshore	B	0.1118	VI252619 Rainbow (Prosperity)
VI-STC-05	Prosperity subwatershed, offshore	B	0.5129	There are currently no monitoring stations within this assessment unit.
VI-STC-06	Sprat Hall Beach	B	0.0609	STC-30 Sprat Hall Beach, VI645288 Sprat Hall
VI-STC-07	Creque Dam/Butler Bay	B	0.529	There are currently no monitoring stations within this assessment unit.
VI-STC-08	Hams Bay	B	0.3144	There are currently no monitoring stations within this assessment unit.
VI-STC-09	Davis Bay	B	0.0522	There are currently no monitoring stations within this assessment unit.
VI-STC-10	Hams Bluff	B	0.5506	There are currently no monitoring stations within this assessment unit.
VI-STC-11	Northwest St. Croix HUC14, offshore	B	33.302	There are currently no monitoring stations within this assessment unit.
VI-STC-12	Cane Bay	B	0.0613	STC-32 Cane Bay, VI201013 Cane Bay
VI-STC-13	Baron Bluff subwatershed	B	0.3498	STC-31 Davis Bay, VI398766 Davis Bay
VI-STC-14	Belvedere	B	0.0557	There are currently no monitoring stations within this assessment unit.
VI-STC-15	Northside subwatershed	B	0.6109	There are currently no monitoring stations within this assessment unit.
VI-STC-16	Salt River Lagoon, Marina	B	0.0194	STC-33 Salt River Marina, STC-33C Salt River Lagoon, Marina

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STC-17	Salt River Lagoon, Sugar Bay	B	0.3244	STC-33D Salt River Lagoon, Sugar Bay
VI-STC-18	Salt River Bay	B	0.3229	STC-33A,B,(E-J-*no longer monitored*) Salt River (Columbus Landing Beach), VI146901 Gentle Winds, VI558328 Columbus Landing
VI-STC-19	Judith Fancy	B	0.01	There are currently no monitoring stations within this assessment unit.
VI-STC-20	Salt River Bay subwatershed, west	B	0.2433	There are currently no monitoring stations within this assessment unit.
VI-STC-21	Salt River Bay subwatershed, east	B	0.8922	There are currently no monitoring stations within this assessment unit.
VI-STC-22	Northcentral St. Croix HUC14, offshore	B	23.61	STC-OFF4 North-2, STC-OFF11 North-4
VI-STC-23	St. Croix-By-the-Sea	B	0.0727	STC- 34 St. Croix-By-the-Sea, VI738082 Pelican Cove
VI-STC-24	Long Reef Backreef, west	C	0.1153	STC-48 Long Reef Backreef, west
VI-STC-25	Princess subwatershed, offshore	B	0.4343	STC-35 Long Reef Forereef West
VI-STC-26	Christiansted Harbor	C	0.9601	STC-37 Christiansted Harbor Entrance West, STC-40 St. Croix Marine, STC-41 Gallows Bay, STC-42 Public Wharf, STC-43 Water Gut Storm Drain, STC-44 Protestant Cay Beach, STC-45 Christiansted Harbor, STC-46 WAPA Intake, STC-47 Mill Harbor

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
				Condominium Beach, STC-49 Long Reef Back Reef East, VI572166 Condo Row (Princess), VI359239 Protestant Cay
VI-STC-27	Long Reef Forereef, east	B	0.3149	STC-36 Long Reef Forereef East, STC-35A LBJ (Pump Station) Outfall
VI-STC-28	Altona Lagoon	B	0.2337	There are currently no monitoring stations within this assessment unit.
VI-STC-29	Christiansted Harbor, east	C	0.1089	STC-1 Lagoon Recreational Beach ,STC-39 Altona Lagoon Inlet, VI213332 New Fort Louise Augusta
VI-STC-30	Beauregard Bay	B	0.2145	STC-2 Ft. Louise Augusta Beach, STC-38 Christiansted Harbour Entrance-East, VI651587 Buccaneer
VI-STC-31	Buccaneer Beach	B	0.0166	STC-3 Buccaneer Hotel
VI-STC-32	Altona Lagoon subwatershed, offshore	B	0.6812	There are currently no monitoring stations within this assessment unit.
VI-STC-33	Punnett Bay	B	0.0576	VI610321 Shoy's
VI-STC-34	Punnett Point, east	B	0.0223	There are currently no monitoring stations within this assessment unit.
VI-STC-35	Tamarind Reef Lagoon (Southgate Lagoon)	B	0.0205	STC-4 Tamarind Reef Lagoon
VI-STC-36	Green Cay Beach	B	0.1017	VI563397 Chenay Bay Beach
VI-STC-37	Southgate subwatershed, offshore	B	2.2219	STC-5 Green Cay Beach
VI-STC-38	Solitude Backreef	B	0.9681	There are currently no monitoring

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
				stations within this assessment unit.
VI-STC-39	Teague Bay	B	0.1773	STC-8 Reef Club Beach, STC-9 St. Croix Yacht Club Beach, VI381319 Teague Bay (Reef)
VI-STC-40	Teague Bay Backreef	B	0.8547	STC-10 Cramers Park, VI351774 Cramer's Park
VI-STC-41	Buck Island Backreef	A	0.7675	STC-6 Buck Island Backreef, STC-7 Buck Island Anchorage
VI-STC-42	Buck Island Forereef	A	3.3497	There are currently no monitoring stations within this assessment unit.
VI-STC-43	Solitude and Teague Bay subwatersheds, offshore	B	18.822	There are currently no monitoring stations within this assessment unit.
VI-STC-44	Northeast St. Croix HUC14, offshore.	B	36.088	STC-OFF8 North-3
VI-STC-45	Isaac Bay	B	0.0853	There are currently no monitoring stations within this assessment unit.
VI-STC-46	Grapetree Bay	B	0.0425	STC-11B Isaacs Bay Forereef
VI-STC-47	Turner Hole Backreef	B	0.2772	STC-12 Grapetree Beach, VI297470 Grapetree Beach
VI-STC-48	Turner Hole subwatershed, offshore	B	16.949	STC-OFF5 East-2
VI-STC-49	Madam Carty Backreef	B	0.464	STC-13B Robin Bay
VI-STC-50	Madam Carty, offshore	B	3.5161	There are currently no monitoring stations within this assessment unit.

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
VI-STC-51	Great Pond	B	0.1578	There are currently no monitoring stations within this assessment unit.
VI-STC-52	Great Pond Bay	B	1.0184	STC-13A Great Pond Bay
VI-STC-53	Great Pond Bay subwatershed, offshore	B	3.0288	STC-OFF13 SE-4
VI-STC-54	Leprey Valley Backreef	B	0.3712	There are currently no monitoring stations within this assessment unit.
VI-STC-55	Leprey Valley subwatershed, offshore	B	2.8455	There are currently no monitoring stations within this assessment unit.
VI-STC-56	Bugby Hole Backreef	B	0.7042	STC-14A Halfpenny Bay - Manchenil ,STC-14B Halfpenny Backreef, VI931289, Halfpenny
VI-STC-57	Bugby Hole subwatershed, offshore	B	3.9	There are currently no monitoring stations within this assessment unit.
VI-STC-58	Southeast St. Croix HUC14, offshore	B	24.146	STC-OFF2 SE-1, STC-OFF10 SE-3
VI-STC-59	Canegarden Bay	B	0.8542	STC-15 Canegarden Bay
VI-STC-60	Canegarden Bay, offshore	B	0.7933	There are currently no monitoring stations within this assessment unit.
VI-STC-61	Hess Oil Virgin Islands Harbor	C	0.671	STC-16 HOVENSA East Turning Basin, NW Corner, STC-17 HOVENSA West Turning Basin, NW Corner
VI-STC-62	Limetree Bay	B	0.7239	STC-18 Limetree Bay Container Port
VI-STC-63	Martin-Marietta	C	0.3228	STC-19 Krause Lagoon Channel, STC-

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
	Alumina Harbor			20 Alumina Plant Dock
VI-STC-64	Manning Bay/Estate Anguilla Beach	B	0.0508	STC-23 Public Dump
VI-STC-65	HOVENSA, west	B	1.2865	STC-22A Treatment Plant (POTW) Outfall; STC-21 Spoils Island (Ruth Island)
VI-STC-66	HOVENSA subwatershed, offshore	B	2.8305	There are currently no monitoring stations within this assessment unit.
VI-STC-67	Southports St. Croix HUC14, offshore	B	8.1966	STC-OFF9 SW-3
VI-STC-68	Bethlehem subwatershed, inshore	B	0.2149	There are currently no monitoring stations within this assessment unit.
VI-STC-69	Bethlehem subwatershed, offshore	B	0.3971	There are currently no monitoring stations within this assessment unit.
VI-STC-70	Airport, nearshore	B	2.1943	There are currently no monitoring stations within this assessment unit.
VI-STC-71	Airport, offshore	B	4.263	STC-OFF6 South-2
VI-STC-72	Airport St. Croix HUC14, offshore	B	4.1803	There are currently no monitoring stations within this assessment unit.
VI-STC-73	Diamond, nearshore	B	0.1699	There are currently no monitoring stations within this assessment unit.
VI-STC-74	Enfield Green Beach/VIRIL Outfall	B	0.1376	There are currently no monitoring stations within this assessment unit.
VI-STC-75	Diamond subwatershed,	B	2.8479	STC-24B Rum Plant (VI Rum) Outfall

Assessment Unit ID	Assessment Unit Name	Class	AU Size (m^2)	Associated Monitoring Stations
	offshore			
VI-STC-76	Carlton Beach	B	0.2447	STC-25 Long Point
VI-STC-77	Long Point Bay	B	0.8376	There are currently no monitoring stations within this assessment unit.
VI-STC-78	Long Point Bay subwatershed, offshore	B	4.9231	STC-OFF12 SW-4
VI-STC-79	Good Hope Beach	B	0.1876	STC-26 Good Hope Beach
VI-STC-80	Sandy Point, nearshore south	B	2.0121	There are currently no monitoring stations within this assessment unit.
VI-STC-81	Sandy Point, offshore south	B	7.4306	There are currently no monitoring stations within this assessment unit.
VI-STC-82	Sandy Point, nearshore west	B	0.1158	STC-27 Sandy Point Public Beach, VI896490 Dorsch Bay, VI907985 Stony Ground
VI-STC-83	Sandy Point, offshore west	B	0.4875	There are currently no monitoring stations within this assessment unit.
VI-STC-84	Southwest St. Croix HUC14, offshore	B	18.347	STC-OFF3 SW-1

B. Classifications, Total Waters and Applicable Standards

The information on Water Quality Criteria by Classification and pollutant are summarized in Table II. B.1, below, which closely follows the wording of Virgin Islands Rules and Regulations. The USVI Water Quality Standards were revised during this reporting cycle. The previous standards were promulgated on June 11, 2010 and the current standards were promulgated in September of 2015. Due to the standards being promulgated at the very end of this reporting cycle, the assessments outlined in this report were made based on the 2010 USVI Water Quality Standards as detailed above.

Class "A" Waters

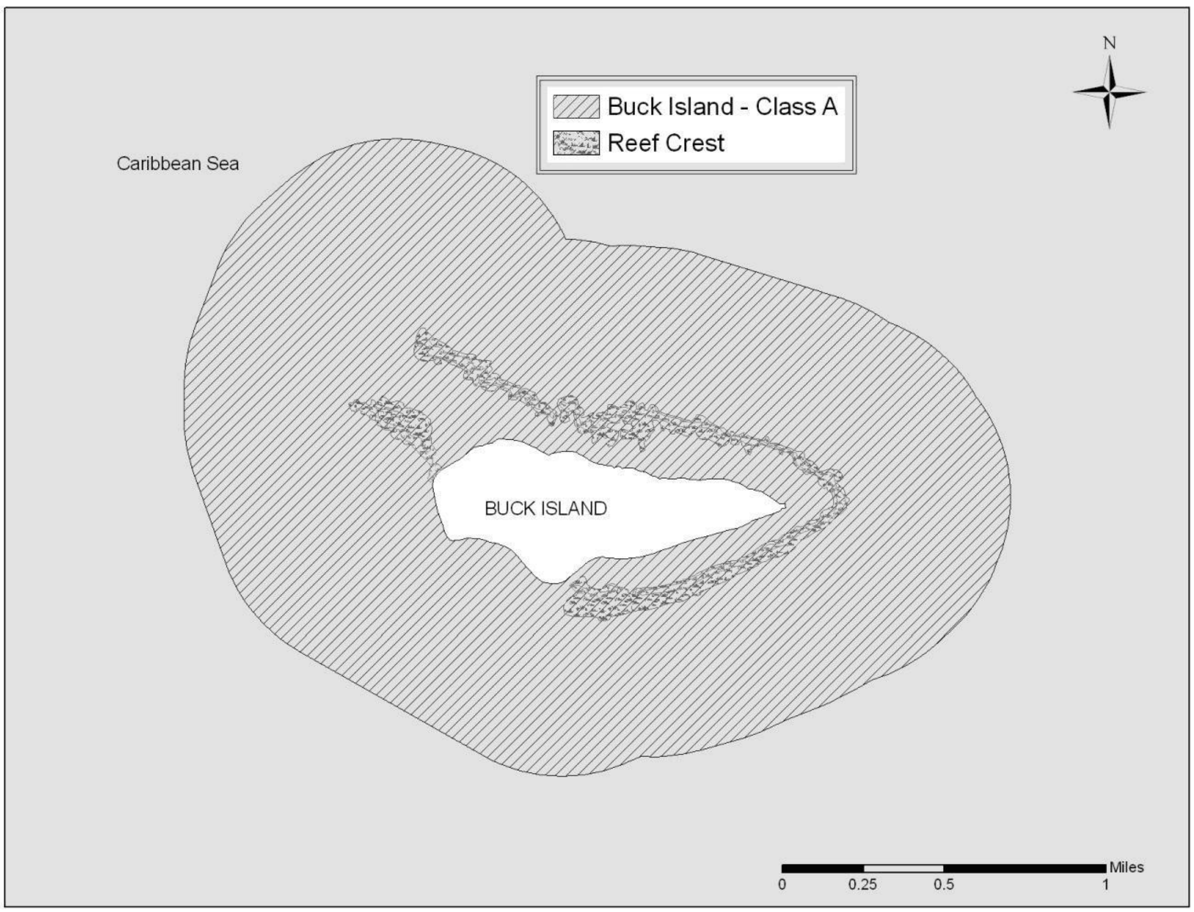
Best usage of waters: Preservation of natural phenomena requiring special conditions, such as the Natural Barrier Reef at Buck Island, St. Croix and the Under Water Trail at Trunk Bay, St. John. These are outstanding natural resource waters that cannot be altered except towards natural conditions. No new or increased dischargers shall be permitted.

Quality criteria: Existing natural conditions shall not be changed. The biological condition shall be similar or equivalent to reference condition for biological integrity. In no case shall Class B water quality standards be exceeded.

Legal Limits

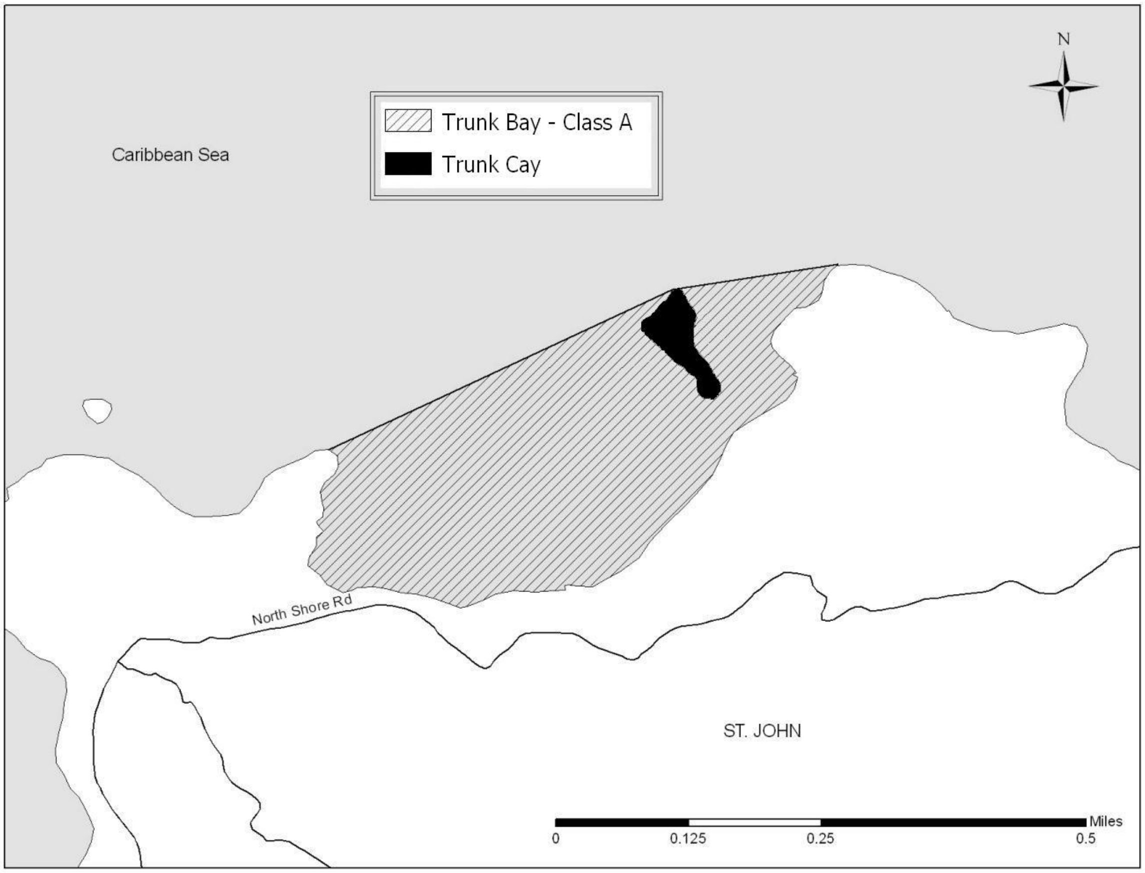
(1) Within 0.5 miles of the boundaries of Buck Island's Natural Barrier Reef, St. Croix.

Figure 1. Class A - Buck Island, St. Croix



(2) Trunk Bay, St. John.

Figure 2. Class A - Trunk Bay, St. John



Class "B" Waters.

Best usage of waters: For maintenance and propagation of desirable species of aquatic life (including threatened, endangered species listed pursuant to section 4 of the federal Endangered Species Act and threatened, endangered and indigenous species listed pursuant Title 12, Chapter 2 of the Virgin Islands Code) and for primary contact recreation (swimming, water skiing, etc.). This Class allows minimal changes in structure of the biotic community and minimal changes in ecosystem function.[1] Virtually all native taxa are maintained with some changes in biomass and/or abundance; ecosystem functions are fully maintained within the range of natural variability.

[1] See Part III.B.(Assessment Methodology) for details on how DPNR assesses biocriteria to ensure this WQS requirement is upheld, and for future strategies to improve biological assessment.

(1) All other waters not classified as Class “A” or Class “C”.

Legal Limits

(A) Those Class “B” waters not covered by color and turbidity criteria in section 186-3(b)(11) of this chapter include:

(i) St. Thomas waters-Mandahl Bay (Marina), Vessup Bay, Water Bay, Benner Bay, and the Mangrove Lagoon.

(ii) St. Croix waters-Carlton Beach, Good Hope Beach, Salt River Lagoon (Marina), Salt River Lagoon (Sugar Bay), Estate Anguilla Beach, Buccaneer Beach, Tamarind Reef Lagoon, Green Cay Beach and Enfield Green Beach.

(iii) All non-marine waters defined as all Virgin Islands waters shoreward of the mean high-tide line.

(B) All other Class “B” waters are covered by the color and turbidity criteria in section 186-3(b)(11)(B) of this subchapter.

Figure 3. Class B - St. Croix (only marine waters displayed)

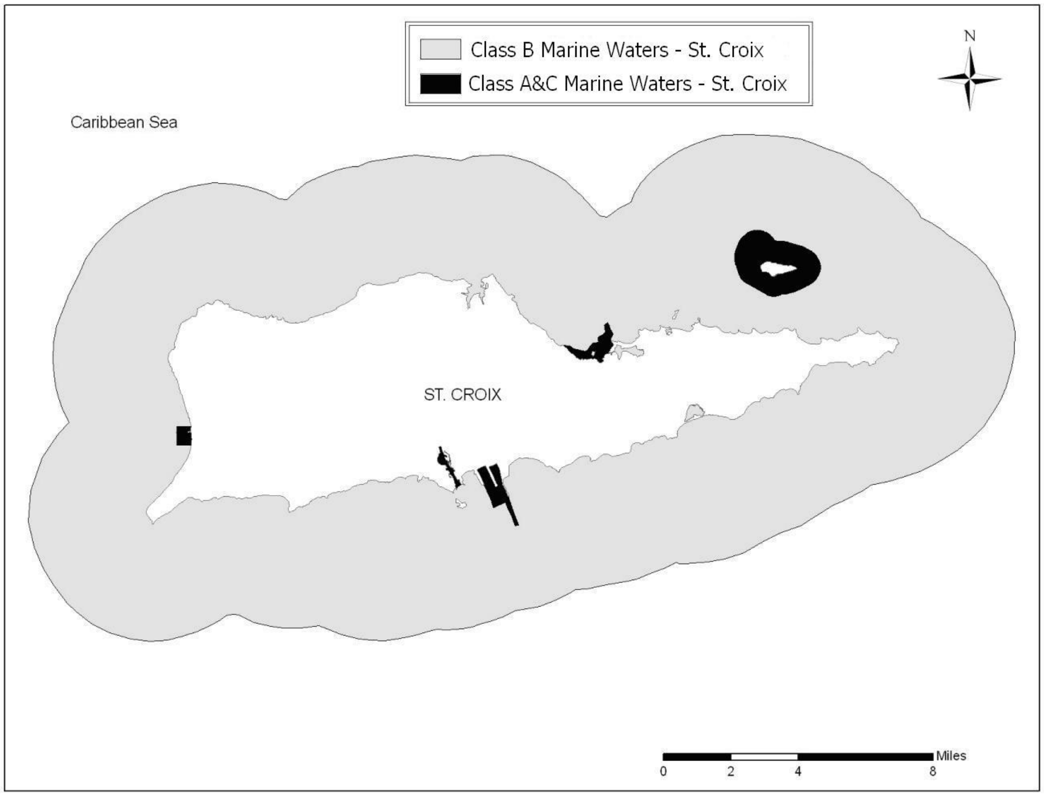
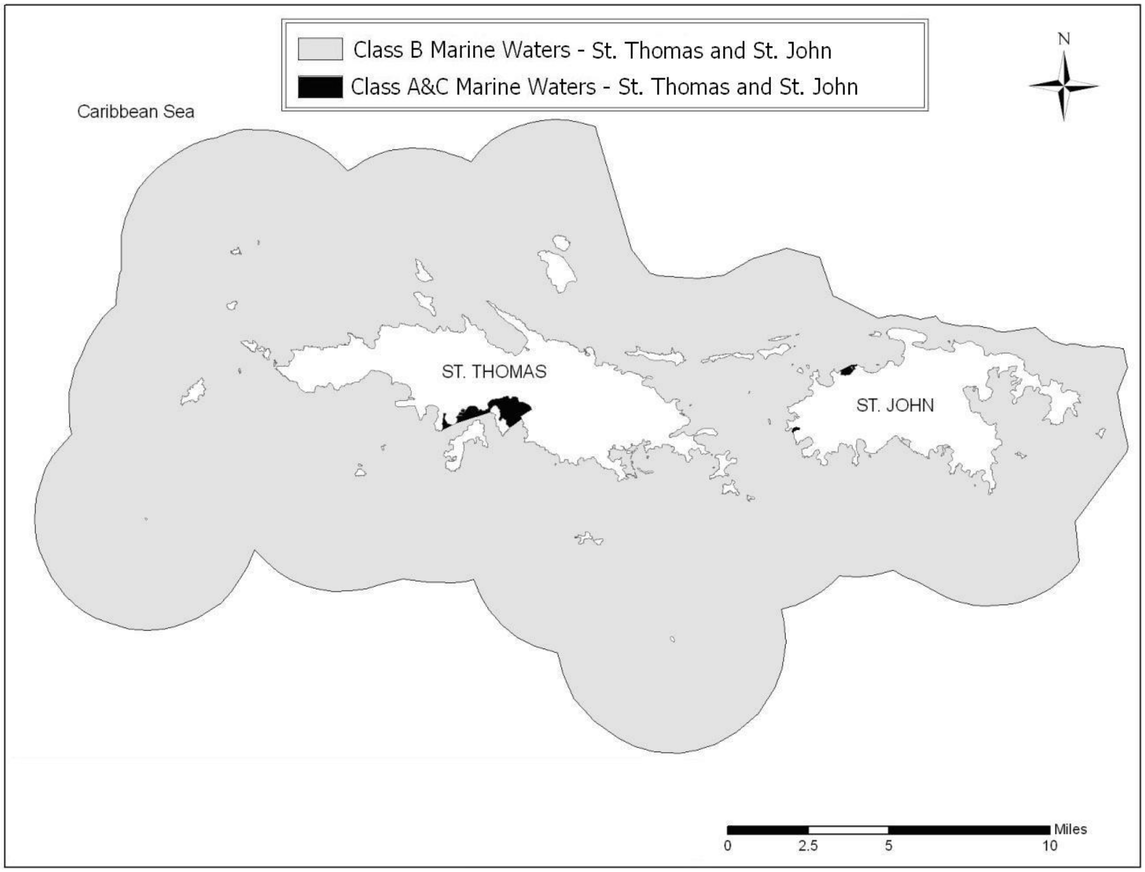


Figure 4. Class B - St. Thomas and St. John (only marine waters displayed)



Class "C" Waters

Best usage of waters: For maintenance and propagation of desirable species of aquatic life (including threatened and endangered species listed pursuant to section 4 of the federal Endangered Species Act and threatened, endangered and indigenous species listed pursuant Title 12, Chapter 2 of the Virgin Islands Code) and for primary contact recreation (swimming, water skiing, etc.). This Class allows for evident changes in structure of the biotic community and minimal changes in ecosystem function.[2] Evident changes in structure due to loss of some rare native taxa; shifts in relative abundance of taxa (community structure) are allowed but sensitive-ubiquitous taxa remain common and abundant; ecosystem functions are fully maintained through redundant attributes of the system.

[2] See Part III.B.(Assessment Methodology) for details on how DPNR assesses biocriteria to ensure this WQS requirement is upheld, and for future strategies to improve biological assessment.

Legal Limits

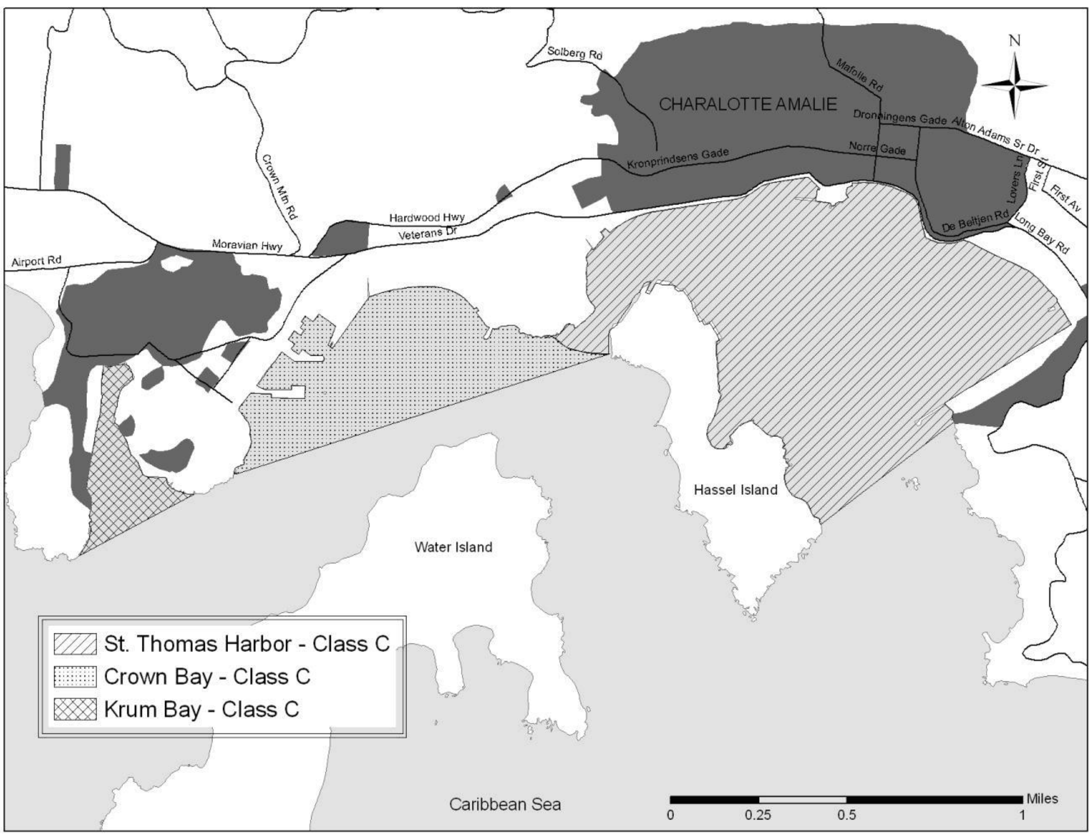
(1) St. Thomas:

(A) St. Thomas Harbor beginning at Rupert Rock and extending to Haulover Cut.

(B) Crown Bay enclosed by a line from Hassel Island at Haulover Cut to Regis Point at West Gregerie Channel.

(C) Krum Bay.

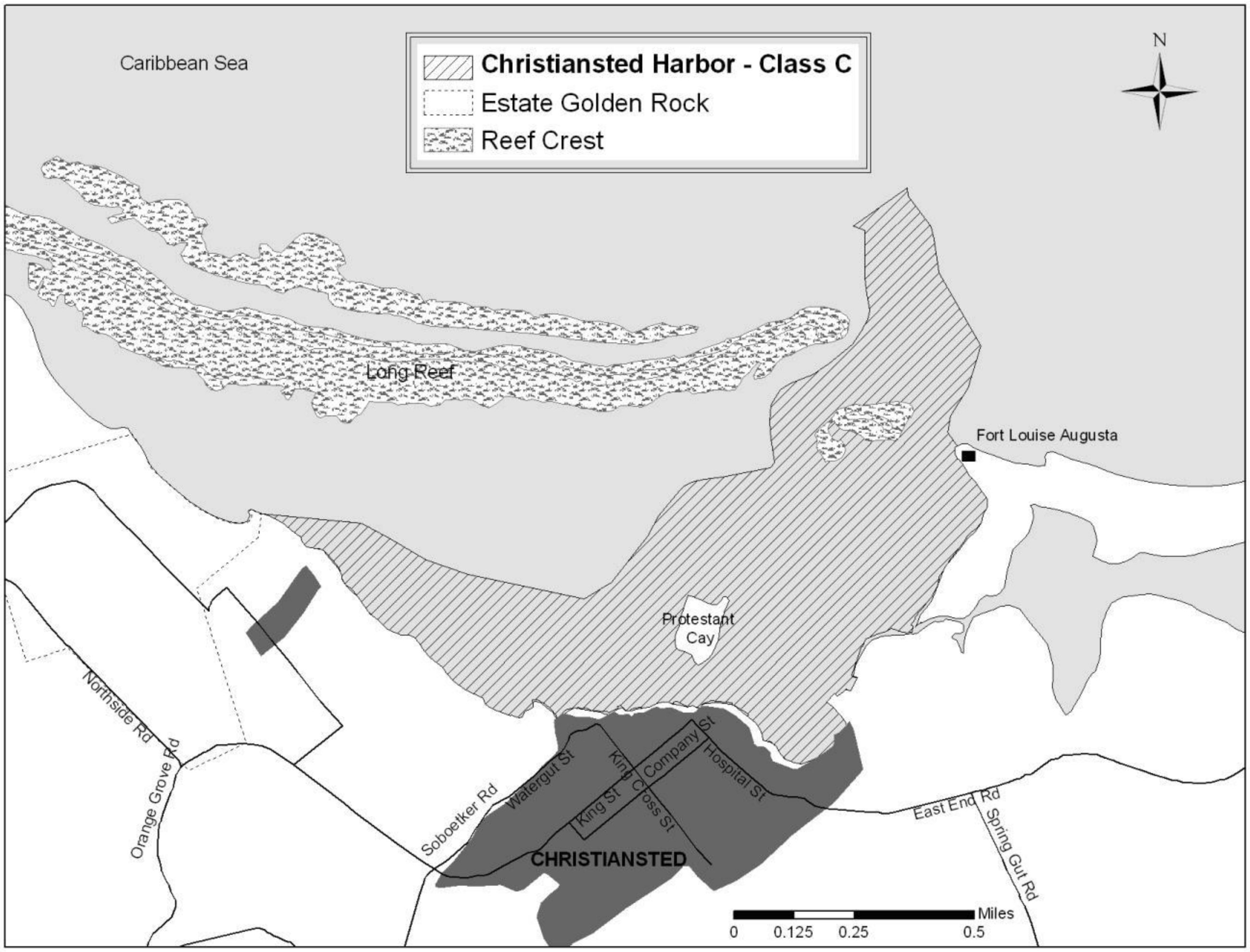
Figure 5. Class C - St. Thomas Harbor, Crown Bay and Krum Bay, St. Thomas



(2) St. Croix:

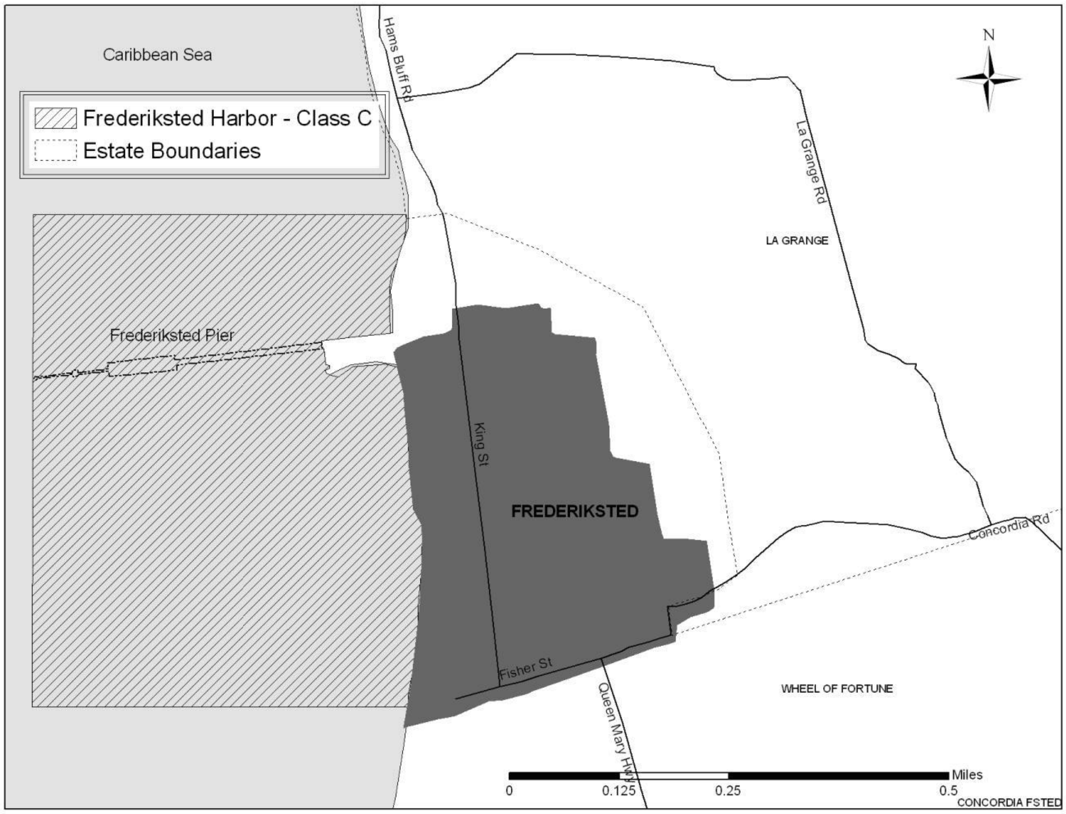
(A) Christiansted Harbor from Fort Louise Augusta to Golden Rock, along the waterfront and seaward to include the navigational channels and mooring areas.

Figure 6. Class C - Christiansted Harbor, St. Croix



(B) Frederiksted Harbor from La Grange to Fisher Street and seaward to the end of the Frederiksted Pier.

Figure 7. Class C - Frederiksted Harbor, St. Croix



(C) Hess Oil Virgin Islands Harbor (alternatively named HOVENSA Harbor).

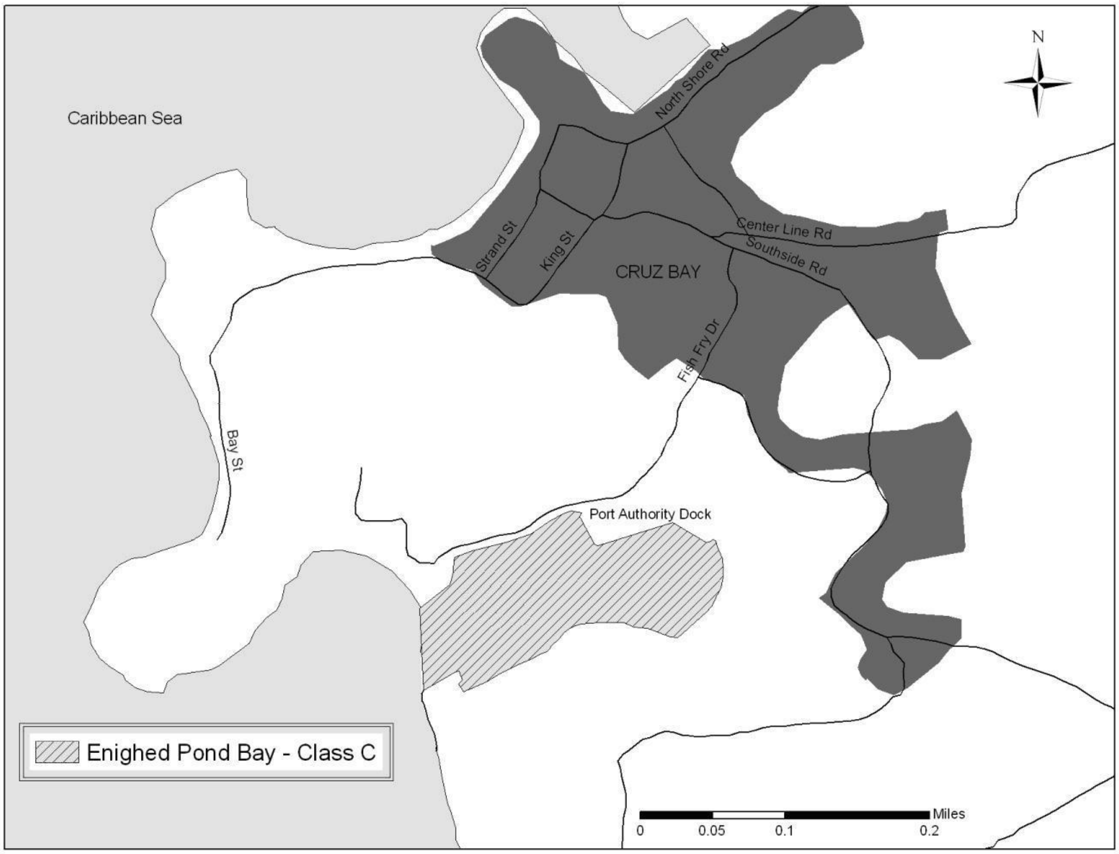
(D) Martin-Marietta Alumina Harbor (alternatively named Port Alucroix or St. Croix Renaissance Group Harbor).

Figure 8. Class C - HOVENSA Harbor and St. Croix Renaissance Group Harbor,

(3) St. John:

(A) Enighed Pond Bay

Figure 9. Class C - Enlighted Pond, St. John



Summary of Criterion Levels of Virgin Islands Water Quality Standards:

Class A

Quality criteria: Existing natural conditions shall not be changed. The biological condition shall be similar or equivalent to reference condition for biological integrity. In no case shall Class B water quality standards be exceeded.

Criterion	Class B	Class C
Dissolved Oxygen	Not less than 5.5 mg/l from other than natural conditions	Not less than 5.0 mg/l from other than natural conditions
pH	<8.3 Tolerable Limit >7.0 Normal range of pH must not be extended at any location by more than ±0.1 pH unit.	<8.5 Tolerable Limit>6.7 Normal range of pH must not be extended at any location by more than ±0.1 pH unit.
Temperature	Not to exceed 32° Celsius at any time, nor as a result of waste discharge to be greater than 1°C above normal.	Same as Class B
Bacteria	A geometric (log) mean of 70 fecal coliforms per 100 ml by MF or MPN count Not to exceed a geometric mean of 35 enterococci per 100 ml, not to exceed a single sample maximum of 104 per 100 ml at any time.	A geometric (log) mean of 200 fecal coliforms per 100 ml by MF or MPN count Not to exceed a geometric mean of 35 enterococci per 100 ml, not to exceed a single sample maximum of 104 per 100 ml at any time
Chlorine	The 4-day average concentration of Chlorine shall not exceed 7.5 ug/l. The 1-hour average concentration of Chlorine shall not exceed 13 ug/l	Same as Class B
Phosphorus	Total P shall not exceed 50 ug/L any coastal waters	Same as Class B
Suspended, colloidal or	None from wastewater sources which will cause	

settleable solids	disposition or be deleterious for the designated uses shall be present in any waters.	Same as Class B
Oil and Floating substances	No residue attributable to waste water. No visible film; no globules of grease shall be present in any waters.	Same as Class B
Radioactivity	**Gross Beta:** 1000 picocuries per liter, in the absence of Sr 90 and alpha emitters **Radium-226:** 3 picocuries per liter **Strontium-90:** 10 picocuries per liter	Same as Class B
Taste and Odor	None in amounts to interfere with use for primary contact recreation, potable water supply or to render undesirable taste or odor to edible aquatic life	Same as Class B
Color and Turbidity	• A secchi disc shall be visible at a minimum depth of one meter • A maximum nephelometric turbidity unit reading of three (3) shall be permissible	• A secchi disc shall be visible at a minimum depth of one meter
Toxicity	The applicable numeric water quality standards for toxic pollutants to protect the designated uses of waters of the U.S. Virgin Islands shall be the Environmental Protection Agency's (EPA) national recommended Clean Water Act section 304(a) water quality criteria, EPA's Office of Water, Office of Science and Technology (4304T), 2006, which is incorporated by reference for: the protection of saltwater aquatic life from acute (criterion maximum concentration)	

	and chronic (criterion continuous concentration) effects; and, the protection of human health from the consumption of organisms. The applicable criteria may be found at: nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1003R9X.TXT
Biocriteria	The Territory shall preserve, protect, and restore water resources to their most natural condition. The condition of these waterbodies shall be determined from measures of physical, chemical, and biological characteristics of each waterbody class, according to its designated use. As a component of these measures, the Territory may consider the biological integrity of the benthic communities living within waters. These communities shall be assessed by comparison to reference conditions(s) with similar abiotic and biotic environmental settings that represent the optimal or least disturbed condition for that system. Such reference conditions shall be those observed to support the greatest community diversity, and abundance of aquatic life as is expected to be or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected indicator communities of flora and/or fauna and may be used in conjunction with other measures of water quality. Waters shall be of a sufficient quality to support a resident biological community as defined by metrics based upon reference conditions. These narrative biological criteria shall apply to fresh water, wetlands, estuarine, mangrove, seagrass, coral reef and other marine ecosystems based upon their respective reference conditions and metrics.
General water quality criteria	These waters shall be free of substances attributable to municipal, industrial, or other discharges or wastes as follows:

	(1) Materials that will settle to form objectionable deposits. (2) Floating debris, oils, scum, and other matter. (3) Substances producing objectionable color, odor, taste, or turbidity. (4) Materials, including radionuclides, in concentrations or combinations which are toxic or which produce undesirable physiological responses in human, fish and other animal life, and plants. (5) Substances and conditions or combinations thereof in concentrations which produce undesirable aquatic life. (6) Exotic or aquatic nuisance species.
	All waters of the U.S. Virgin Islands shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. "Waters" of the U.S. Virgin Islands shall be defined, as follows, as in by Title 12, Chapter 7, Section I82(f) of the Virgin Islands Code; "Waters of the United States Virgin Islands" means all waters within the jurisdiction of the United States Virgin Islands including all harbors, streams, lakes, ponds, impounding reservoirs, marshes, water-courses, water-ways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the United States Virgin Islands, including the territorial seas, contiguous zones, and oceans."

** Information listed in the table above is from the USVI Water Quality Standards promulgated on June 11, 2010

Table II.B.2 Area of Water Classes by Island

	St. Croix	St. Thomas	St. John	Total
Class A	4.1172 sq. miles	---	0.0685 sq. miles	4.1857 sq. miles
Class B	244.89 sq. miles	272.95 sq. miles	79.958 sq. miles	597.8 sq. miles
Class C	2.2132 sq. miles	1.0323 sq. miles	---	3.2454 sq. miles
Total	251.2204 sq. miles	273.9823 sq. miles	80.0265 sq. miles	605.23 sq. miles

Figure II.B.2 Spatial Distribution of St. Croix Coastal Water Classes

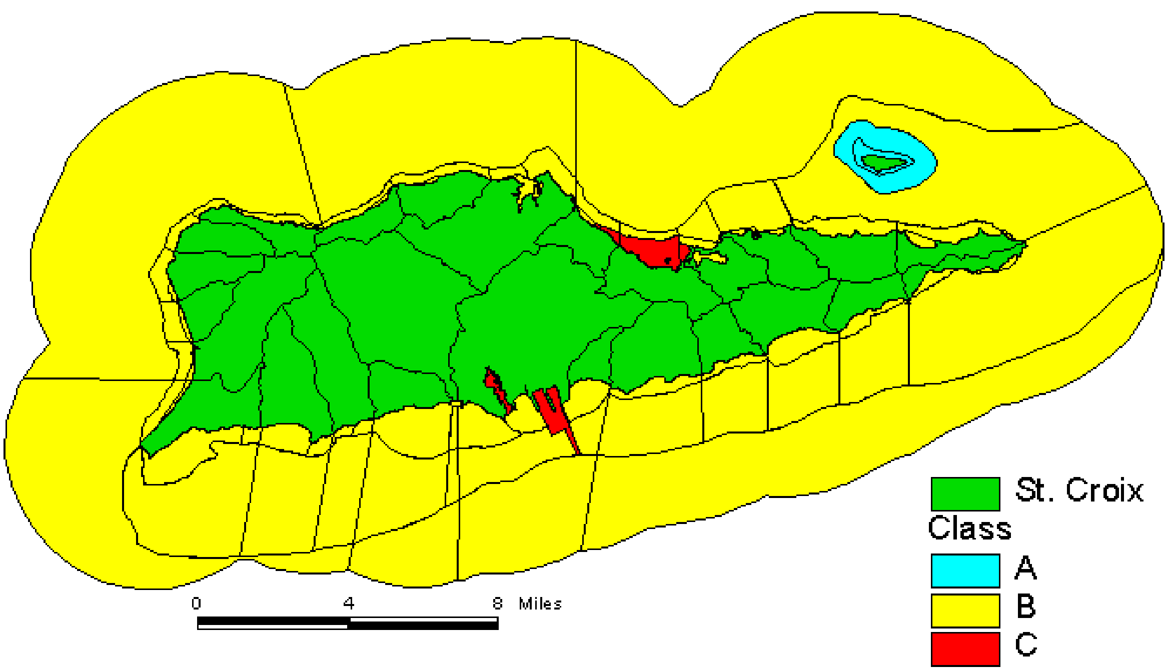
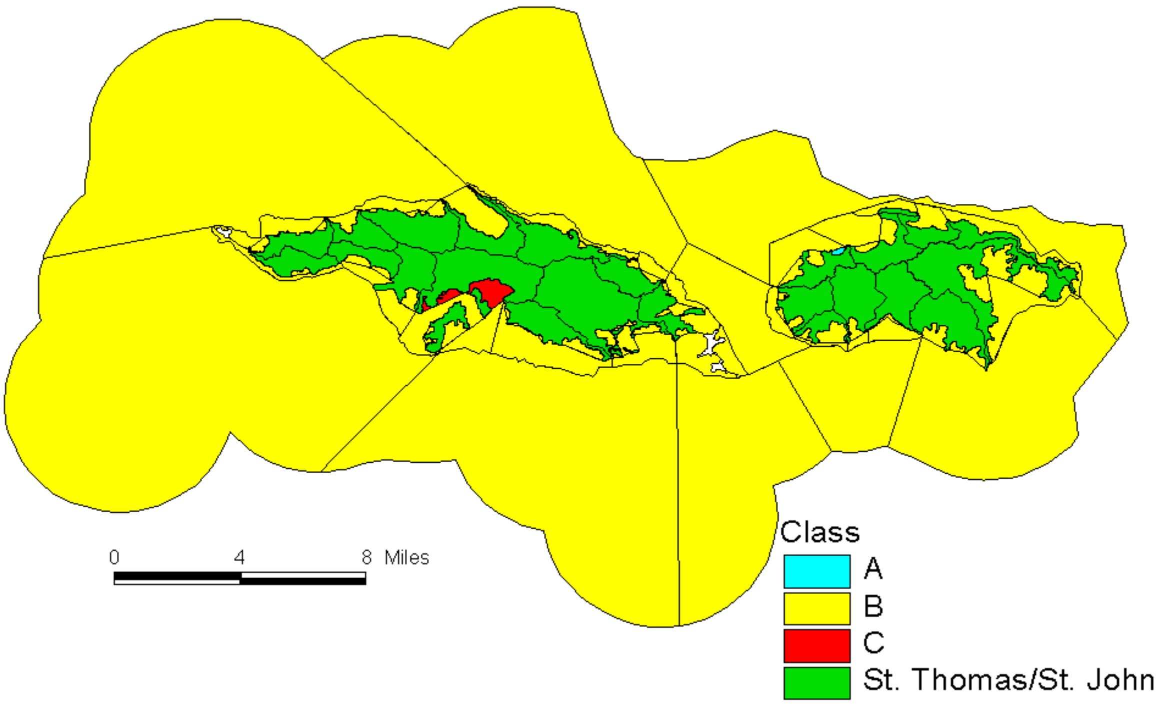


Figure II.B.3 Spatial Distribution of St. Thomas/St. John Coastal Water Classes



Water quality standards for each class of designated use are provided in Table II.B.1.

Water Quality Standards to Address Drinking Water Use Attainment

The water quality standards do not address drinking water use attainment. Since most of the USVI's drinking water supply comes from seawater purified by flash desalinization or reverse osmosis and from traditional rainwater cisterns (still required for all new construction) most national drinking water issues directed at surface or groundwater resources are moot in the Virgin Islands. There are no drinking water source-based quality standards available for organic compounds (volatile, synthetic, herbicides, pesticides and PCB), inorganic compounds, unregulated chemicals, and radiological contaminants that apply to the ocean surrounding the US Virgin Islands because ocean water does not fit the definition of surface water under the Safe Drinking Water Act. Standards do exist under the Virgin Islands Rules and Regulations that demand natural existing conditions for waters designated

Class A remain unchanged. Waters designated Class B should not exceed 70 fecal coliform per 100mL and waters designated Class C should not exceed 200 fecal coliform per 100mL. All waters of the Virgin Islands should not exceed a geometric mean of 35 enterococci per 100 ml or not to exceed a single sample maximum of 104 per 100 ml at any time. The reason that drinking water source-based standards are not developed in the US Virgin Islands is that drinking water is generally derived from cisterns holding rainwater at each house, or supplemented for public housing and in droughts and other emergencies by desalinization of seawater, as a co-generation by-product of the Virgin Islands Water and Power Authority. The Water and Power Authority in St. Croix maintains some public water supply wells.

No surface water is used directly for any drinking water supply, although questions have been raised about whether sea water intakes of contaminated water is capable of passing bacterial contamination through the relatively low temperature (60° C) flash desalinization processes.

C. Water Pollution Control Program

Under the Water Pollution Control Grant (pursuant to CWA §106), the V.I. Department of Planning and Natural Resources (DPNR), Division of Environmental Protection (DEP) is entrusted with the task of monitoring the marine waters of the USVI, and controlling the discharges into those waters. To accomplish this task the Water Pollution Control Program (WPC) is organized into the following sub-programs:

- AMBIENT MONITORING PROGRAM (now managed by Water Quality Management Program)
- TMDL DEVELOPMENT AND IMPLEMENTATION PROGRAM (now managed by Water Quality Management Program)
- TERRIORIAL POLLUTANT DISCHARGE ELIMINATION SYSTEMS PERMITTING AND COMPLIANCE PROGRAM
- VIRGIN ISLANDS BEACH MONITORING PROGRAM (now managed by Water Quality Management Program)

Now there is only one WPC sub-program that this report will concentrate its focus on it is as follows:

1. The Territorial Pollutant Discharge Elimination Systems (TPDES) Permitting and Compliance Program permits and monitors point source waste streams, which are discharged into the waters of the VI, in accordance with the VI Water Quality Standards.

1. Territorial Pollutant Discharge Elimination Systems Program

The Territorial Pollutant Discharge Elimination Systems (TPDES) Permitting and Compliance Program is a federally delegated program which determines what waste streams are allowed to be discharged into the waters of the Virgin Islands, TPDES Permits are issued in accordance to Title 12, Chapter 7 §184-11 of the Virgin Islands Rules and Regulations states, that "…no person shall discharge or cause a discharge of any pollutant without a TPDES permit having been issued to such person…" TPDES permits require that point source discharges of pollution be monitored by the permittee (facility), and the self-monitoring results are submitted to DPNR-DEP and the United States Environmental Protection Agency (USEPA). Additionally, DPNR-DEP conducts compliance inspections and monitoring at all facilities that have been issued TPDES permits on an annual basis to ensure compliance. There are three types of compliance inspections conducted at TPDES permitted facilities throughout the Territory - Compliance Sampling Inspections, Compliance Evaluation Inspections and Pump Station Inspections, which are conducted on a quarterly basis at the Territory's Publicly Owned Treatment Works (POTW).

If a facility is repeatedly found to be in non-compliance with its TPDES permit or has been found to violate the USVI's Water Quality Standards, enforcement actions may be taken against the facility. The enforcement action usually outlines corrective actions necessary for the facility to return to compliance and, if deemed necessary, fines may also be assessed. Facilities that are enforced against are usually granted the opportunity to work closely with the Department to develop a compliance schedule that sets the timeline the facility will use to achieve compliance.

If necessary or when requested, DPNR-DEP may work closely with the USEPA and the Department of Justice (DOJ) to address major enforcement cases. Cases of this nature included an ongoing case against the Department of Public Works which is currently under Federal Consent Decree for unpermitted discharges caused by sewage treatment infrastructure problems throughout the Territory. In such cases, DEP is called upon to monitor the facility in question and produce supporting inspection reports and other pertinent documentation.

Regulated discharges and discharge sites include sewage treatment plant outfalls (both public and private facilities), brine discharges from reverse osmosis (and other technology) freshwater production plants, industrial facility process water discharges, industrial facility storm water discharge, and storm water discharge from construction sites with exposed soils over 1 acre.

The TPDES Program currently regulates discharges from sewage treatment plant outfalls (both public and private facilities), brine discharges from reverse osmosis, desalination freshwater production plants, industrial facility process water discharges, industrial facility storm water discharge, and construction site storm water discharge.

TPDES Program has several components, all under the auspices of the Division of Environmental Protection:

- TPDES Permit Issuance;
- TPDES Compliance Inspections: Compliance Evaluation (CEI), Compliance Sampling (CSI) and Pump Station Inspections (PSI); and
- Enforcement

TPDES Permit Issuance:

Territorial TPDES permits are issued with effluent limitations pertinent to Federal and Local Regulations. The major industrial dischargers, which have permitted discharges of over 1 MGD, include the HOVENSA Oil Refinery, VI Rum Distillery (CVL), St. Croix Renaissance Group, Water and Power Authority in the St. Croix district; the Water and Power Authority and the Marriott Frenchman's Reef on St. Thomas. The major municipal dischargers include the St. Croix POTW, Mangrove Lagoon POTW and Charlotte Amalie POTW. The TPDES Program also permits a number of minor industrial and municipal facilities.

TPDES Permits are also issued for storm water discharge, both for construction sites that expose 1 acre or more of soils as well as industrial facilities currently operating within the Territory.

Table II.C.1 US Virgin Islands TPDES Permits, 2014 and 2015

PERMIT NUMBER	FACILITY NAME	ISLAND
VI0039870	AMERICAN YACHT HARBOR	ST. THOMAS
VI0040517	ANCHORAGE CONDOMINIUMS	ST. THOMAS
VI0040312	BAYSIDE RESORT INC (SAPP)	ST. THOMAS
VI0040495	BLUEBEARDS BEACH CLUB & VILLAS	ST. THOMAS
VI0080012	BOLONGO BAY BEACH RESORT	ST. THOMAS
VI0040215	CABRITA DEVELOPMENT INC.	ST. THOMAS
VI0080055	CALABASH BOOM HOUSING	ST. JOHN
VI0039837	CANEEL BAY	ST. JOHN
VI0020010	CHEVRON PUERTO RICO – LLC	ST. THOMAS
VI0040401	COMPASS POINT MARINA	ST. THOMAS
VI0040291	CORAL WORLD INC	ST. THOMAS
VI0080071	CORY NEWBLOM	LOVANGO CAY
VI0039900	COWPET BAY EAST CONDOMINIUM	ST. THOMAS
VI0039853	COWPET BAY WEST CONDOMINIUM	ST. THOMAS
VI0080021	DIVERGSTEM COMPANY INC (LIMA)	ST. THOMAS
VI0080128	DONALD SUSSMAN	ST. THOMAS
VI0040444	DOROTHEA BEACH CONDOMINIUMS	ST. THOMAS
VI0040321	ELYSIAN BEACH RESORT	ST. THOMAS
VI0040584	ESSENCE PROPERTIES, LLC	HASSEL ISLAND
VI0090613	FRENCHMAN’S COVE CONDOMINIUM OWNER’S ASSOCIATION, INC.	ST. THOMAS
VI0039829	BCM/CHI FRENCHMAN’S REEF, INC.	ST. THOMAS
VI0040622	GALLOWS POINT CONDOMINIUMS	ST. JOHN

VI0040266	WMA (GEORGE SIMMONDS) POTW	ST. JOHN
VI0040207	H & V HEAVY EQUIPMENT	ST. THOMAS
VI0040801	HULL BAY HIDEAWAY	ST. THOMAS
VI0080098	JOSEPH JOHN MARKUS TRUST	LOVANGO CAY
VI0040738	LAKES WATER SERVICE	ST. THOMAS
VI0072015	LAU FAMILY TRUST	ST. THOMAS
VI0040525	LITTLE ST. JAMES	ST. THOMAS
VI0080047	LOVENLUND	ST. THOMAS
VI0000215	MAGENS BAY AUTHORITY	ST. THOMAS
VI0040614	MAHOGANY RUN	ST. THOMAS
VI0040746	MARKET SQUARE EAST	ST. THOMAS
VI0082415	MARGARITAVILLE VACATION CLUB	ST. THOMAS
VI0040193	POINT PLEASANT RESORT	ST. THOMAS
VI0080063	RAPHUNE VISTAS	ST. THOMAS
VI0040479	RITZ CARLTON	ST. THOMAS
VI0039934	SAPPHIRE BAY CONDOMINIUM WEST	ST. THOMAS
VI0040029	SAPPHIRE VILLAGE	ST. THOMAS
VI0040398	SECRET HARBOR BEACH RESORT	ST. THOMAS
VI0080004	SECRET HARBOR HOUSE III	ST. THOMAS
VI0040452	ST. JOHN WAPA	ST. JOHN
VI0039993	ST. THOMAS DAIRIES (TRANS-CARIBBEAN DAIRY)	ST. THOMAS
VI0000060	ST. THOMAS WAPA	ST. THOMAS
VI0002003	WMA (MANGROOVE LAGOON) POTW	ST. THOMAS
VI0020044	WMA (REDPOINT) POTW	ST. THOMAS
VI0040461	SUGAR BAY BEACH CLUB & RESORT	ST. THOMAS

VI0040703	TOTAL PETROLEUM TUTU SERVICE STATION	ST. THOMAS
VI0080080	TUTU PARK, LTD	ST. THOMAS
VI0020133	WMA (VESSUP BAY) POTW	ST. THOMAS
VI0039977	WMA (BORDEAUX) POTW	ST. THOMAS
VI0039811	WMA (BRASSVIEW) POTW	ST. THOMAS
VI0040835	WMA (NEW CRUZ BAY) POTW	ST. THOMAS
VI0040762	VIRGIN ISLANDS NATIONAL GUARD	ST. THOMAS
VI0040606	WATER POINT ESTATES	ST. THOMAS
VI0040134	WATERGATE VILLAS CONDOMINIUMS	ST. THOMAS
VI0080110	WINTBERG VILLAGE APARTMENTS	ST. THOMAS
VI0031114	VI HOUSING AUTHORITY	ST. THOMAS
VI0040151	WESTIN ST. JOHN HOTEL	ST. JOHN

PERMIT NUMBER	**FACILITY NAME**	**ISLAND**
VI0050024	ST. CROIX RENNAISANCE GROUP	ST. CROIX
VI0000019	HOVENSA, LLC	ST. CROIX
VI0000305	BUCCANEER RESORT	ST. CROIX
VI0020052	CRUZAN VIRIL, LTD	ST. CROIX
VI0000051	WAPA ST. CROIX	ST. CROIX
VI0020036	WMA (ANGUILLA) POTW	ST. CROIX
VI0040240	RADISSON CARAMBOLA BEACH RESORT	ST. CROIX
VI0040916	CANDLE REEF II ASSOCIATION	ST. CROIX

VI0040231	GRAPETREE SHORES INC (DIVI RESORT)	ST. CROIX
VI0050202	ST. CROIX FINANCIAL CENTER INC	ST. CROIX
VI0040886	NO.9 SHOYS BEACH	ST. CROIX
VI0040878	THE REEF ASSOCIATES	ST. CROIX
VI0050032	COAKLEY BAY CONDOMINIUMS	ST. CROIX
VI0050199	CHENAY BAY BEACH RESORT	ST. CROIX
VI0050229	GENTLEWINDS CONDOMIUMS	ST. CROIX
VI0050326	GRAPETREE BAY HOTEL	ST. CROIX
VI0050237	THE WAVES AT CANE BAY	ST. CROIX
VI0003042	KRYSTAL SPRINGS	ST. CROIX
VI0050288	SOUTHGATE COURTYARD VILLAS	ST. CROIX
VI0050334	CUSI	ST. CROIX
VI0050377	TIBBAR ENERGY USVI, LLC	ST. CROIX
VI0050245	CARDEN BEACH FACILITIES ASSOC.	ST. CROIX

Construction General Permit Coverages – FY2014 and FY2015

PERMIT NUMBER	FACILITY NAME	TYPE	ISLAND
VIGSA0016	WHARTON-SMITH, INC. (POND BAY CLUB)	STORMWATER	ST. JOHN
VIGSA0018	ST. THOMAS REGIONAL LIBRARY & ARCHIVES CENTER	STORMWATER	ST. THOMAS
VIGSA0052	ROYAL PALMS PROFESSIONAL OFFICE BUILDING	STORMWATER	ST. THOMAS
VIGSA0084	BOTANY BAY HILLTOP SUBDIVISION	STORMWATER	ST. THOMAS
VIGSA0086	REH VITOL WAPA PROJECT	STORMWATER	ST. THOMAS
VIGSA0088	USVI SOLAR I PROJECT	STORMWATER	ST. THOMAS
VIGSA0090	STT SENIOR HOUSING PROJECT	STORMWATER	ST. THOMAS
VIGSA0092	THE PRESERVE AT BOTANY BAY	STORMWATER	ST. THOMAS
VIGSA0094	HOTEL COMPANY FIRE STATION	STORMWATER	ST. THOMAS
VIGSA0096	METRO MOTORS	STORMWATER	ST. THOMAS
VIGSA0098	UVI SOLAR ARRAY PROJECT	STORMWATER	ST. THOMAS
VIGSA0100	PARCEL 45 PROJECT	STORMWATER	ST. THOMAS
VIGSA0102	UVI MEDICAL SCHOOL BUILDING	STORMWATER	ST. THOMAS
VIGSA0104	DRY MARINA, LLC	STORMWATER	ST. THOMAS
VIGSA0106	MAGEN’S JUNCTION APARTMENTS	STORMWATER	ST. THOMAS

VIGSA0046	NO.481-1 ESTATE CHOCOLATE HOLE GAS STATION, CONVENIENCE STORE & APARTMENT	STORMWATER	ST. THOMAS

PERMIT NUMBER	**FACILITY NAME**	**TYPE**	**ISLAND**
VIGSA0013	GOLDEN GAMING RESORTS	STORMWATER	ST. CROIX
VIGSA0017	MONTPELLIER SMALL FARMERS PROJECT	STORMWATER	ST. CROIX
VIGSA0035	CARLTON CONDOS (GEC)	STORMWATER	ST. CROIX
VIGSA0049	R&T PARK	STORMWATER	ST. CROIX
VIGSA0053	SANDY POINT ROAD IMPROVEMENTS	STORMWATER	ST. CROIX
VIGSA0057	IGLESIA PENTECOTAL CHURCH PROJECT	STORMWATER	ST. CROIX
VIGSA0059	LOUIS E. BROWN CONSTRUCTION PROJECT	STORMWATER	ST. CROIX
VIGSA0063	VING BETHLEHEM PROJECT	STORMWATER	ST. CROIX
VIGSA0065	CVL MOLASSES TANKS	STORMWATER	ST. CROIX
VIGSA0069	26 RATTAN SUBDIVISION	STORMWATER	ST. CROIX
VIGSA0071	ST. CROIX WMA TRANSFER STATION	STORMWATER	ST. CROIX
VIGSA0077	CROSIER MT. WELCOME PROJECT	STORMWATER	ST. CROIX
VIGSA0079	ST. CROIX CINEMAS	STORMWATER	ST. CROIX
VIGSA0081	LEB PHASE II	STORMWATER	ST. CROIX
VIGSA0083	ANNA’S HOPE APT. PROJECT	STORMWATER	ST. CROIX
VIGSA0091	FIRST ASSEMBLY OF GOD	STORMWATER	ST. CROIX

	PROJECT		
VIGSA0093	VITOL RICHMOND FACILITY	STORMWATER	ST. CROIX
VIGSA0095	HERA APRON REHAB PROJECT	STORMWATER	ST. CROIX
VIGSA0097	UVI SOLAR ARRAY PROJECT	STORMWATER	ST. CROIX
VIGSA0099	HEAD START CENTER PROJECT	STORMWATER	ST. CROIX
VIGSA0101	CVL LPG STORAGE PROJECT	STORMWATER	ST. CROIX
VIGSA0107	ALCOA GROUP A UNITS PROJECT	STORMWATER	ST. CROIX
VIGSA0111	TOSHIBA SOLAR FARM PROJECT	STORMWATER	ST. CROIX
VIGSA0113	TIBBAR ENERGY PROJECT	STORMWATER	ST. CROIX
VIGSA0115	SUGAR MILLS VILLA PROJECT	STORMWATER	ST. CROIX
VIGSA0125	RDC DEMO PROJECT	STORMWATER	ST. CROIX
VIGSA0127	UVI SIMULATION CENTER PROJECT	STORMWATER	ST. CROIX
VIGSA0129	STX SOLAR LLC PROJECT	STORMWATER	ST. CROIX
VIGSA0131	ARRF FACILITY PROJECT	STORMWATER	ST. CROIX
VIGSA0133	CONTENTMENT MINI MART	STORMWATER	ST. CROIX
VIGSA0135	ORANGE GROVE SUBDIVISION PHASE 1 PROJECT	STORMWATER	ST. CROIX
VIGSA0137	STX SOLAR II, LLC PROJECT	STORMWATER	ST. CROIX
VIGSA0141	ORANGE GROVE SUBDIVISION PHASE 2 PROJECT	STORMWATER	ST. CROIX

Industrial Storm Water General Permit Coverages – VIMSGP – FY2014 and FY2015

PERMIT NUMBER	FACILITY NAME	TYPE	ISLAND
VIR050001	AGGREGATE INC	STORMWATER	ST. CROIX
VIR050003	DIAGEO DISTILLERY	STORMWATER	ST. CROIX
VIR050005	DIAGEO BARREL WAREHOUSE	STORMWATER	ST. CROIX
VIR050009	VI ASPHALT CORPORATION (VIAPCO)	STORMWATER	ST. CROIX
VIR050011	VITOL LPG FACILITY	STORMWATER	ST. CROIX
VIR050015	HEAVY MATERIALS LLC	STORMWATER	ST. CROIX

TPDES Compliance Inspections:

A schedule of compliance evaluation inspections (CEI) and compliance sampling inspections (CSI) is incorporated into the WPC program work-plan. In general, DEP staff conducts a CSI at major facilities and POTWs annually. Generally, facilities with minor permits receive only an annual CEI.

Table II.C.2 Summary of TPDES Activities, FY2014 - 2015

FY2014	**St. Thomas/St. John**	**St. Croix**
CEI	35	8
CSI	4	5
Construction Stormwater	4	4
Industrial Stormwater	1	2

PSI	8	2

FY2015	**St. Thomas/St. John**	**St. Croix**
CEI	13	14
CSI	2	4
Construction Stormwater	10	14
Industrial Stormwater	3	2
PSI	4	4

Additional inspections are conducted at the Territorial POTWs, including the major and minor pump stations. These inspections are scheduled quarterly.

Table II.C.3 Supplementary POTW Inspections: TPDES Activities, FY2014 - 2015

FY2014 and FY2015

Facility Name	Permit #	Type	Quarter
St. Thomas Pump Stations	VI0039811 VI0039977 VI0020044 VI0002003 VI0020133	PSI (C)	1st-4th
St. John Pump Stations	VI0040835 VI0040266	PSI (C)	
St. Croix Pump Station	VI0020036	PSI (C)	

Legend

C-Compliance Evaluation Inspection

S-Compliance Sampling Inspection

AOE-Affidavit of Exemption

PSI-Pump Station Inspections

MMI-Multi-Media Inspection

ECS-Enforcement Case Support

2. *Enforcement Actions*

Violations within the TPDES program can come from non-compliance with permitted effluent limits, or failure to report monitoring as required by the permit. This includes any special conditions contained within the permit. For example, St. Croix POTW permit requires the permittee to take several specific actions in the event of a bypass. Violations issued by DEP during this reporting period were:

Table II.C.4 Summary of TPDES Enforcement Activities, FY 2014 - 2015

FY2014

Action No.	Against	Type	Status
STX-WPC-001-15	VIWMA	NOV	PENDING
STX-WPC-003-15	CUSI	NOV	PENDING
STX-WPC-004-15	VI NATIONAL GUARD	NOV	PENDING
STX-WPC-005-15	GENTLE WINDS CONDOS	NOV	DISMISSED

FY2015

Action No.	Against	Type	Status
STX-WPC-002-15	GRAPETREE BAY HOTEL	NOV	DISMISSED
STX-WPC-004-15	KRYSTAL SPRINGS LLC	NOV	PENDING
STX-WPC-005-15	CHENAY BAY BEACH RESORT	NOV	PENDING
STX-WPC-006-15	AGGREGATE INC	NOV	PENDING
STT-WPC-001-15	PRESTIGE COMPANY	NOV	DISMISSED
STT-WPC-002-15	BLUE BIO LLC	NOV	PENDING
STT-WPC-003-15	CHARLES B. JENSEN	NOV	PENDING
STT-WPC-004-15	HULL BAY HIDEAWAY	NOV	PENDING
STT-WPC-005-15	DOROTHEA BEACH CONDOS	NOV	PENDING
STT-WPC-006-15	GALLOWS POINT CONDOS	NOV	DISMISSED

STT-WPC-007-15	BOLONGO BAY BEACH RESORT	NOV	PENDING
STT-WPC-008-15	COMPASS POINT MARINA	NOV	PENDING
STT-WPC-010-15	WMA BRASSVIEW POTW	NOV	PENDING
STT-WPC-011-15	WMA CRUZ BAY POTW	NOV	PENDING
STT-WPC-012-15	WMA GEORGE SIMMONDS POTW	NOV	PENDING
STT-WPC-013-15	TUTU PARK MALL	NOV	PENDING
STT-WPC-014-15	BLUEBEARDS BEACH CLUB & VILLAS	NOV	DISMISSED
STT-WPC-015-15	WATERGATE VILLAS EAST	NOV	DISMISSED
STT-WPC-016-15	WMA BORDEAUX POTW	NOV	PENDING
STT-WPC-017-15	WMA VESSUP POTW	NOV	PENDING
STT-WPC-018-15	LAKE’S WATER SERVICE	NOV	DISMISSED
STT-WPC-019-15	WESTIN ST. JOHN	NOV	DISMISSED
STT-WPC-020-15	CORAL WORLD	NOV	DISMISSED
STT-WPC-021-15	H&V HEAVY EQUIPMENT	NOV	PENDING
STT-WPC-022-15	COWPET BAY EAST CONDOMINIUMS	NOV	PENDING
STT-WPC-023-15	MARKET SQUARE EAST, INC	NOV	PENDING

WPC continued to participate in the Department of Justice Teleconferences which discussed the Department of Public Works/Waste Management Authority’s compliance with the Consent Decree.

D. Non-Point Source Program

This section of the US Virgin Islands Integrated Water Quality Monitoring and Assessment Report provides an assessment of the water quality conditions based on the implementation of the Non-Point Source Management Program for the period covering fiscal years 2014 and 2015 (October 1, 2013 through September 30, 2015).

The Non-Point Source (NPS) Management Program goals for the reporting period remained consistent with that of previous years: to protect ground and coastal waters by mitigating both land and marine nonpoint pollution sources. Non-point source pollution, in the form of polluted runoff, impairs more water bodies than any other source of pollution in the Virgin Islands. Non-point source pollution in the Virgin Islands is caused by rainfall moving over and through the ground. As runoff moves, it picks up and carries away both natural pollutants and pollutants resulting from human activities. These pollutants include sediments, nutrients, pesticides, and toxic substances such as hydrocarbons and heavy metals. Eventually these pollutants are deposited in wetlands, coastal waters and ground water.

There are numerous problems associated with non-point source pollution. Two of the major non-point source problems affecting the Virgin Islanders are sedimentation and bacterial contamination.

- Sedimentation occurs when soil is eroded from the land surface, such as at construction sites, and deposited onto the land surface or into coastal water bodies. Sedimentation results in problems such as habitat losses and marine life mortality.
- Bacterial contamination from sources such as failed septic systems, runoff from animal operations, and sewage discharged from boats can cause serious threats to human health

To facilitate discussion, this report for the NPS program is divided into the following two parts:

Part I: Program Activity Measures

Part II: Program Accomplishments – summarizes the successes of the program

- Program Management
- Earth Change permitting program
- Educational Outreach
- Travel and Training
- Reporting

PART I: NPS PROGRAM ACTIVITY MEASURES

The NPS Program Activity Measures are summarized below:

1. Waterbodies identified by States (in 2000 or subsequent years) as being primarily nonpoint source-impaired that will be partially or fully restored (cumulative).

There are twenty-four assessment units identified with established total maximum daily loads (TMDL) as listed below:

Table II.D.1 TMDLs Established for the USVI due Primarily to Non-Point Sources.

TMDL Water body	AU in TMDL	TMDL Impairment	TMDL Established
Benner Bay	VI-STT-33	Dissolved Oxygen	Sept 30, 2003
Benner Bay Lagoon	VI-STT-34	Dissolved Oxygen	Sept 30, 2003
Mangrove Lagoon	VI-STT-35	Biochemical Oxygen Demand	Sept 30, 2003
Salt River Bay	VI-STC-18	Dissolved Oxygen	Sept 24, 2004
Salt River Lagoon, Marina	VI-STC-16	Dissolved Oxygen	Sept 24, 2004
Salt River Lagoon, Sugar Bay	VI-STC-17	Dissolved Oxygen	Sept 24, 2004
Great Cruz Bay, St. John	VI-STJ-28	Oil & Grease	Sept, 29 2005
Red Hook Bay, St. Thomas	VI-STT-24	Oil & Grease, Biochemical Oxygen Demand	Sept 29, 2005
Hassel Island at Haulover Cut to Regis Point, St. Thomas	VI-STT-47	Oil & Grease	Sept 29, 2005

Mangrove Lagoon, St. Thomas	VI-STT-35	Fecal Coliform	Sept 29, 2005
Benner Bay, St. Thomas	VI-STT-33	Fecal Coliform	Sept 29, 2005
Magens Bay, St. Thomas	VI-STT-10	Fecal Coliform	Sept 29, 2005
Vessup Bay, St. Thomas	VI-STT-23	Fecal Coliform, Biochemical Oxygen Demand	Sept 29, 2005
Hassel Island at Haulover Cut to Regis Point, St. Thomas	VI-STT-47	Fecal Coliform	Sept 19, 2006
North Shore St. Croix Assessment Units	VI-STC-26, VI-STC-27, VI-STC-24, VI-STC-25, VI-STC-23,	Phosphorus, Biological Oxygen Demand, Fecal Coliform, Sediment Oxygen Demand, Total Suspended Solids, Enterococcus Bacteria	Sept 26, 2007
St. Thomas Harbor Assessment Units	VI-STT-49, VI-STT-50, VI-STT-45, VI-STT-47, VI-STT-51, VI-STT-39, VI-STT-40, VI-STT-46, VI-STT-43,	Biological Oxygen Demand, Enterococcus Bacteria, Fecal Coliform and Sediment Oxygen Demand	September 03, 2010

- No TMDLs were established for FY2014 or FY2015

2. Reduction in amount of total sediment loadings (in tons).

Not measured and quantified – currently revising the multi-year monitoring strategy to assess sediment reductions. A contract was let with Tetra Tech Inc, of Fairfax, Virginia for the characterization of guts (intermittent streams), within watersheds feeding a TMDL waterbody, in relation to their location, daily flow, and condition (Manning's roughness coefficient).

3. Reduction in amount of total nitrogen loadings (in pounds).

Not measured and quantified – currently revising the multi-year monitoring strategy to assess nitrogen reductions. A contract is ongoing with Tetra Tech Inc, of Fairfax, Virginia for the characterization of land use coefficients for use in determining NPS pollution loadings for parameters such as Biological Oxygen demand, nutrients (particularly nitrogen) sediment, bacteria, oil/grease, and impervious surfaces.

4. Reduction in amount of total phosphorus loadings (in pounds).

Not measured and quantified – currently developing a multi-year monitoring strategy to assess load reductions. See discussions for items 2and 3 above.

5. Number of watershed-based plans (and water miles/acres covered), supported under state Nonpoint Source Management Programs since the beginning of FY'02 that have been substantially implemented.

Two watershed-based plans have been substantially implemented.

Fish Bay Watershed Management Plan, St. John) - 4.2 gut miles (water miles) covering 1,487.6 acres. The Fish Bay watershed is experiencing rapid residential development and corresponding impacts from uncontrolled erosion, sediment and stormwater. VI RC&D was contracted by the V.I. Department of Planning & Natural Resources Coastal Zone Management Program (DPNR-CZM) to assist in designing and implementing best management practices (BMPs) to mitigate pollution in the Fish Bay watershed. The primary goal of the project was to develop a Comprehensive Road Stabilization Plan with Best Management Practices.

Fish Bay: retaining wall and subdivision road.

Fish Bay: sediment damage.

The Coral Bay Watershed Management Plan was finalized in March 2008 through a collaborative effort of multiple local and Federal agencies, the Coral Bay Community Council (CBCC), and many local land owners and developers -- to serve as a guide for developing ways to protect Coral Bay from sediment and stormwater pollution. The plan provides a comprehensive set of objectives and actions that address land use planning, protection and restoration of sensitive lands and aquatic buffers, better site design and construction techniques, and effective stormwater management. Please note that the selected example sites are representative; there are many more sites in Coral Bay that deserve equal attention. This plan document is being used now as a helpful outline to undertake detailed actual multi-agency and community discussions to plan activities and prioritize actions on achieving the objectives. The EPA CARE grant being received by CBCC for 2009 and 2010 will bring stormwater expertise to Coral Bay expressly to implement the plan. The plan can be reviewed at http://www.coralbaycommunitycouncil.org/watershed.htm**.** The Coral Bay watershed is

- 5th largest watershed in VI: 3003 ac.
- Fastest developing area in VI
- 79% growth rate 1990-2000 Census
- 750+ residents in 2000
- 5% developed – Huge potential
- Area of Particular Concern
- Coral Reef National Monument
- Longest V.I. fringing mangrove
- 100's of acres of wetlands, coral reefs and seagrass beds

Coral Bay: sediment damage.

PART II: PROGRAM ACCOMPLISHMENTS

The NPS program can be subdivided into three sections:

1. Program Management to include development of total maximum daily loads (TMDLs)[3] implementation plans and restoration plans for Virgin Island's impaired waters; wetlands management, implementation of the Stormwater program; GIS capacity building, etc.
2. Section 319(h) nonpoint source control grants program; performs water quality restoration and educational projects
3. Earth Change permitting program in the second tier of the coastal zone.

PROGRAM MANAGEMENT

One of the major activities to be undertaken was to attach resources and timelines to the approved 2014-2015 work plan in order to ensure all NPS Tasks and Subtasks were addressed and reported. NPS identified stakeholders such as the St. Croix Environmental Association (SEA), the Environmental Association of St. Thomas (EAST), the Coral Bay Council (CBC), The Nature Conservancy (TNC), and Virgin Islands Conservation Society (VICS) in order to formalize partnerships with local entities. Additionally, governmental agencies/programs such as USDA-NRCS, DPNR-DEP, DPNR-Permits, DEP-Water Quality, DEP-Water Pollution, DPNR-Flood Plain Management, DPNR-CZM, Caribbean Environmental Protection Division CEPD and National Oceanic Atmospheric Administration (NOAA) were also invited for the purpose of integrating NPS goals with other programs by membership in the NPS Pollution Steering Committee. There are currently 25 committee members and we are still recruiting. Meetings were held in the Third and Fourth Quarter to discuss the direction, goals and by-laws development for the new Committee.

The reconvened NPS Pollution Committee discussed strategic approaches and adaptive management principals in order to further achieve and maintain water quality standards. The Committee determined that the goal going forward will be the reviewing guidelines and policies in accordance with the approved work plan, and grant agreements, update the Environmental Handbook, and consider developing rules and regulations to give more enforcement authority within guidelines and policies to responsible agencies. Through the Environmental Hand Book the NPS Program will update the Management Plan and help to prevent further non-point source pollution, in the form of polluted runoff, which impairs more water bodies than any other source of pollution in the Virgin Islands. Staff was successful in obtaining a conditional approval on a $50,000 VIDPNR Nonpoint Source Implementation Grant to revise the U.S. Virgin Islands Environmental Handbook and Design Manual.

A. Total Maximum Daily Load data development and gut characterization

The project by TetraTech, Inc. continued in FY14. The objectives are as follows:

a). Characterization of land use coefficients for use in determining non-point source pollution loadings for parameters such as Biological Oxygen Demand, nutrients (particularly nitrogen), sediment, bacteria, oil/grease, and impervious surfaces

b). Characterization of guts within watersheds feeding a TMDL waterbody in relation to their location, daily flow, and condition (Manning's roughness coefficient).

The first phase of this project entails a multi-faceted approach to allow for future characterization of non-point pollutant loading coefficients. Several factors that drive pollutant loading regimes were investigated based on available data and literature, and initial recommendations for additional data collection have been developed in anticipation of further dialogue with VIDPNR staff. Factors that drive pollutant loading and were investigated during this phase of work include precipitation distribution information, and in-stream watershed monitoring data. The first section of this memorandum provides our initial assessment of these datasets. The second section of this memorandum discusses out recommendations for future monitoring.

Precipitation Estimation and In-Stream Monitoring Data

The climate of the Lesser Antilles region is dominated by the easterly trade winds. This maritime tropical region is characterized by fair weather, steady winds, and slight but regular annual, seasonal, and diurnal ranges in temperature. Rain-producing weather systems typically move into the Virgin Islands from the east in summer and from the northwest in winter. These systems tend to produce rain over land when moist, tropical air is forced upward by an island's higher land elevations. This causes rainfall trends in the Virgin Islands of wet-to-dry patterns from the west end to the east end of the islands. For this reason, the spatial variation in rainfall is large, and precipitation measured at a given station may not accurately represent rainfall even a short distance away.

Annual rainfall amounts on St. Croix, for example, differ with respect to physiographic region, and to a lesser extent based on the season. Seasonal rainfall and temperature data collected near Christiansted are shown in Figure 1. The period from September to November is generally when more rainfall occurs, but topographic setting is a more significant variable with respect to rainfall on St. Croix.

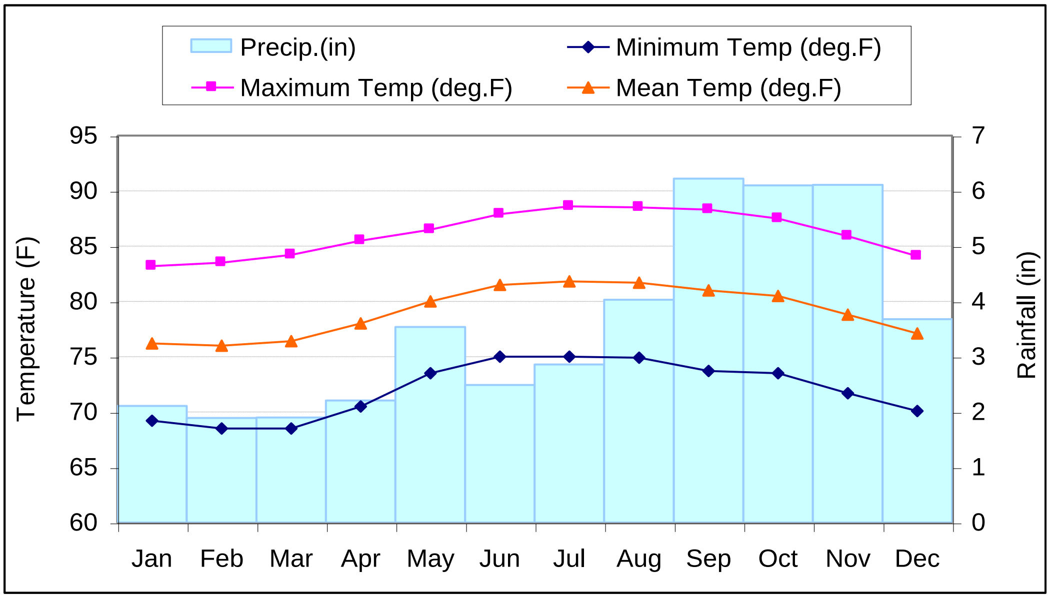


Figure 1. Monthly temperature and precipitation averages observed at the Bethlehem Upper New Works station near Christiansted, St. Croix.

There are four stations in the USVI that monitor at least one meteorological parameter. Two of them monitor precipitation; Bethlehem Upper New Works on St. Croix (Figure 2), and Caneel Bay Plantation on St. John (Figure 3). Surface Airways data (atmospheric pressure, temperature, humidity, cloud cover, wind direction and speed) are collected in Cyril E. King Airport on St. Thomas (Figure 4) and at Christiansted Airport on St. Croix (Figure 2).

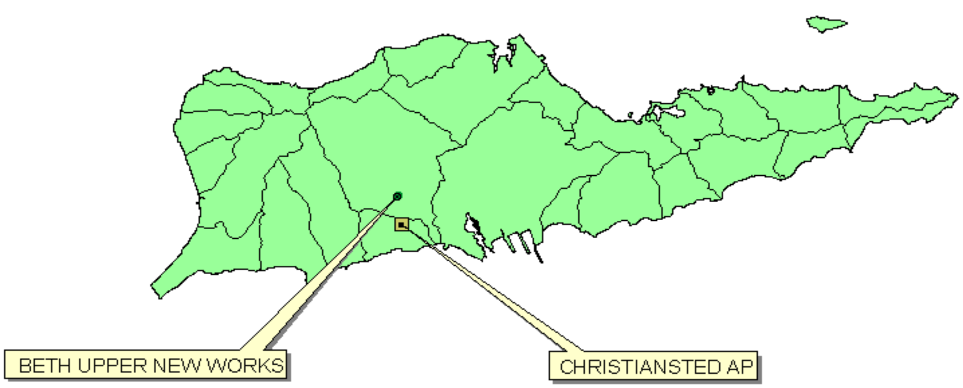


Figure 2. **Meteorological stations in St. Croix, USVI**

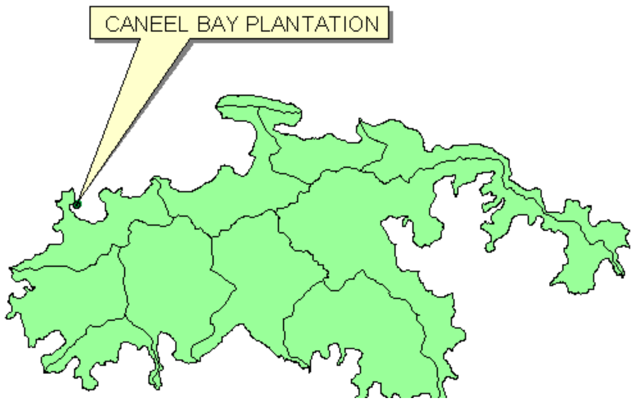


Figure 3. **Meteorological stations in St. John, USVI**

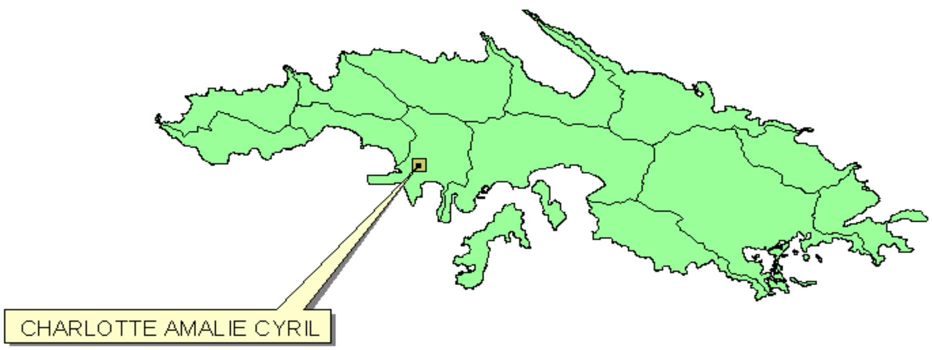


Figure 4. **Meteorological stations in St. Thomas, USVI**

In an effort to better characterize rainfall patterns in the USVI, VIDPNR has requested that Tt conduct analyses to estimate variable precipitation intensity and time offsets across St. Croix, St. Thomas, and St. John. Significant datasets that were used to derive intensity distribution were obtained from local publications and digital elevation models of the islands.

Rainfall Intensity

A local assessment of typical annual precipitation patterns was developed by the Department of Conservation and Cultural Affairs (DCCA)/ Fish and Wildlife Service in the 1970s: (http://www.fw.dpnr.gov.vi/education/FactSheets/PDFs/Climatology.pdf). Fact Sheet #2 was obtained from a series devoted to public awareness regarding the USVI, and the fact sheet was digitized into a geographic information system by Tt. This precipitation distribution was incorporated with other GIS layers Tt maintains in-house. This spatial product was then used to derive relative precipitation intensities for each island, based on the location of existing precipitation stations. Intensity multipliers were assigned to each intensity group across the islands (see Figure 5).

The ranges provided by the original DCCA data were then translated into relative intensity values. For example, when the Bethlehem Upper New Works precipitation station is overlaid with the digitized rainfall distribution map, its location falls within the 30-35” annual precipitation zone. Using a relative weighting method, all areas on the island of St. Croix were within the 30-35” zone were assumed to experience the same rainfall intensity as the Bethlehem Upper New Works station.

For other intensity zones, a multiplier was calculated relative to the 30-35” zone. The multiplier was derived by using the average of each of the precipitation ranges. For example, the value for the 30-35” precipitation zone becomes 32.5” (the nominal precipitation). Because the precipitation station is located in the 30-35” zone (or the 32.5” nominal precipitation), it’s coefficient is 1, which indicates that the precipitation estimate for all areas within that zone should multiply the rainfall observed at the station by 1.

Using the same method as above, the 35-40” zone has a nominal precipitation of 37.5”, and so on for the other zones. Precipitation coefficients were derived for the other zones by dividing the nominal precipitation in that zone by the station’s nominal precipitation. So, to derive the rainfall coefficient for the 35-40” zone, 37.5 was divided by 32.5 to obtain 1.15. Therefore, to estimate rainfall amounts for the 35-40” zone, the observed precipitation from Bethlehem Upper New Works can be multiplied by 1.15. Precipitation coefficients for all areas in the USVI are shown in Figure 5. Once the rainfall intensity was mapped for the USVI, a time offset for rain events was developed.

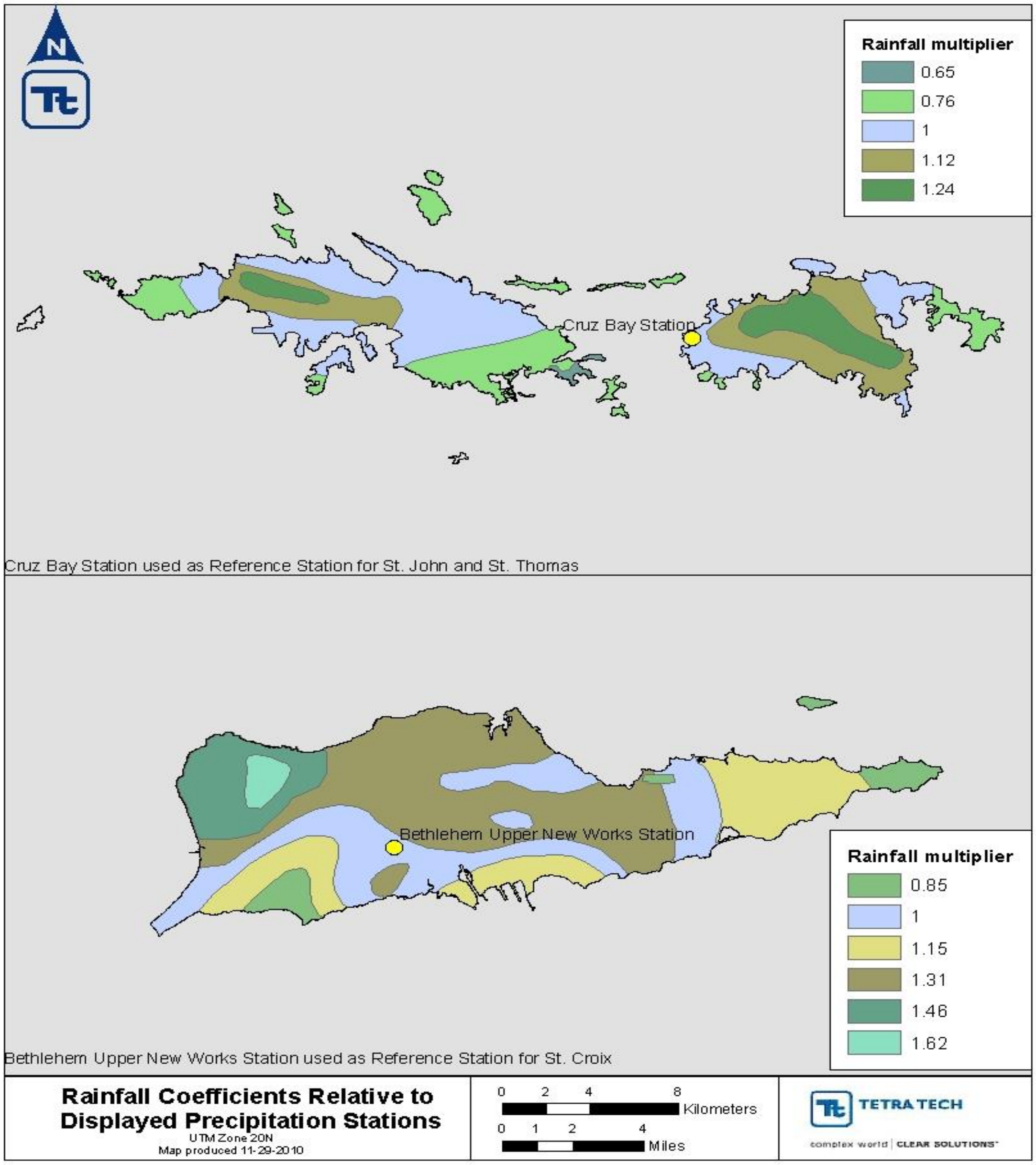


Figure 5. Intensity Multipliers & Meteorological stations in USVI.

Rainfall Time Offsets

Due to the intense nature of rainfall events in the Lesser Antilles region, flashy characteristics of the guts that drain the USVI, and implications of discharges to tidal waters, the timing of rainfall events becomes critical in the estimation of fate and transport of pollutants. The morphology of St. Croix, St. Thomas, and St. John effects the distribution of rainfall on these islands, as discussed in the previous section. The mountainous terrain also impedes the movement of squall lines across the island, making travel time nonlinear. Morphology is a significant factor in calculating offsets, as systems must rise over the mountainous sections of the islands before arrival at other locations. As discussed previously, the climate of the Lesser Antilles is relatively stable, with northeasterly tradewinds dominating. Naturally, all squall lines will not have the same characteristics in terms of approach and speed. However, this dominant weather pattern was selected as a model for developing time offsets for the USVI. A northeast wind of 6 km/h was used, as it is the most common wind vector experienced in the USVI throughout the year.

Morphology data was obtained in the form of high-resolution, 30-meter interval USGS Digital Elevation Model data for all three islands (see Figure 6). DEM Data for St. Croix, St. Thomas, and St. John were overlaid with a 2km grid oriented in the northeast direction to coincide with the dominant wind vector. The transects spaced 2km apart were used to extract profiles from the DEM dataset, which produced a linear distance and a profile distance (see Figure 7). The linear distance is the straight line distance, whereas the profile distance is the distance traveled over the profile. The profile distance will always be equal to or greater than the linear distance.

For each 2km transect interval, the coincident profile distance was plotted. This provided a gridded array of points over the islands that could be contoured and related to a time offset. The profiled distance (see Figure 7) was used to calculate the linear velocity of rain events, assuming the events are moving at 6km/h. For example, an event would cover a linear distance of 6km in one hour. But if the 6km distance is characterized by mountainous terrain, the profile distance would be greater, and it would take a longer period of time to travel the 6km. If the 6km of linear distance is characterized by a profile distance of 8km, then a storm traveling at 6km/h would complete the linear distance in 1 hour and 20 minutes.

Figure 8 shows the 2km linear distance grid overlayed with the island boundaries. The datum for St. John and St. Thomas was created to the northeast of St. John at the origin of the prevailing wind. Transects were drawn to the southwest from this datum at 2km intervals. As the transects intersect the land areas (represented by the DEM dataset), the linear and profile distances diverge. For example, Figure 8 identifies one of the transects covering St. John near the midpoint of the island. After traveling 2 grid cells (4km), the profile distance was 4.1km. This represents the elevation change being encountered in the DEM dataset. Likewise, at 6km linear distance, 6.17km has been traveled in profile distance. Points indicating the profile distance were developed to cover the islands prior to contouring.

The point data were then contoured using the Spatial Analyst extension in ArcGIS. Contour lines were generated at 2km intervals, where, assuming a 6km/h wind speed from the northeast, the travel time would be 20 minutes between contour lines. The time offsets were linked to precipitation stations, so that offsets could theoretically be applied to observed data as long as the event has the characteristics that were assumed. The St. Thomas and St. John offsets are in relation to the precipitation station at Cruz Bay, St. John, while the St. Croix offsets are linked to the Bethlehem Upper New Works precipitation station. The time offsets for all three islands are shown in Figure 9.

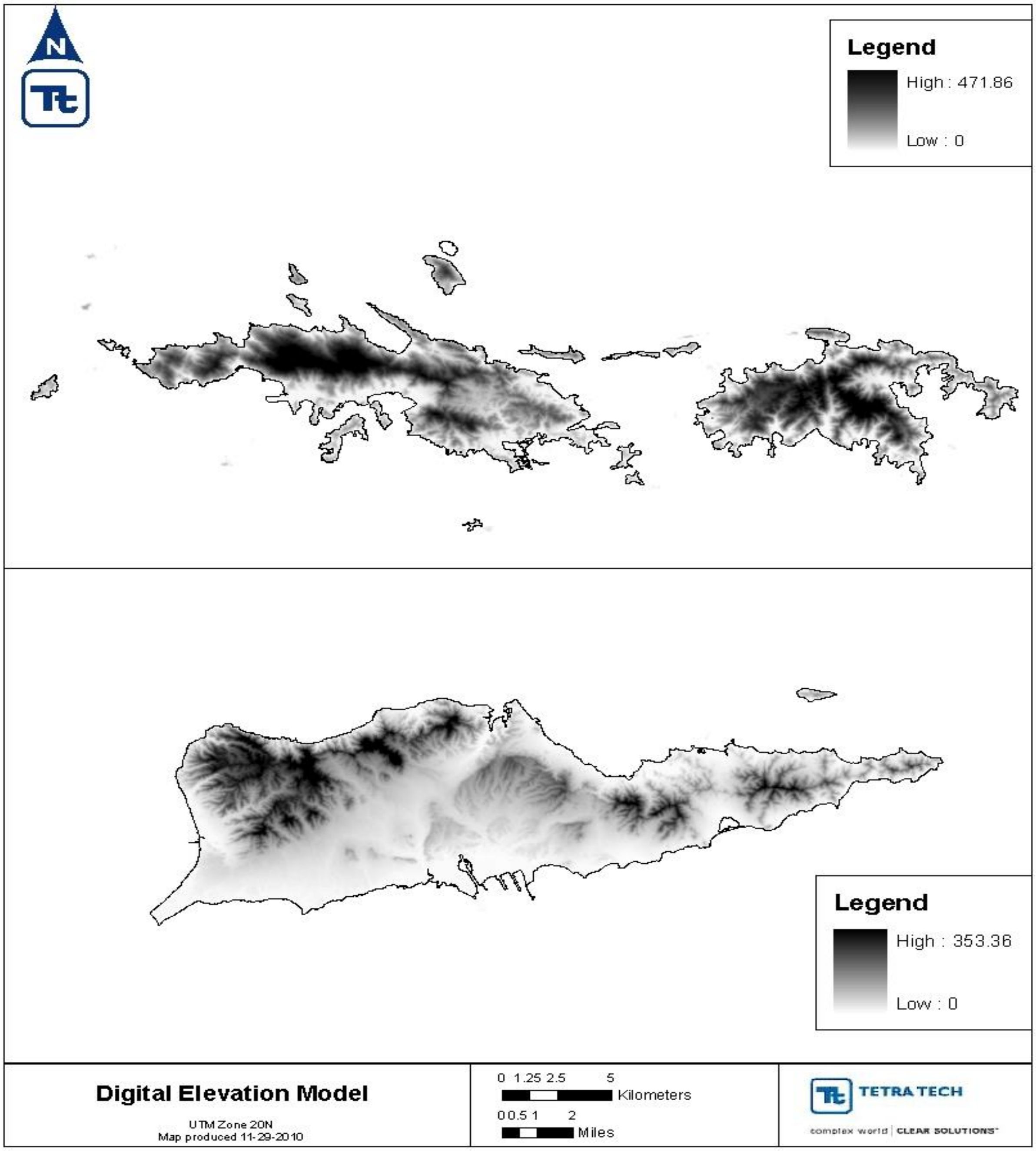


Figure 6. Digital Elevation Model (in meters) developed for St. Croix, St. Thomas, and St. John.

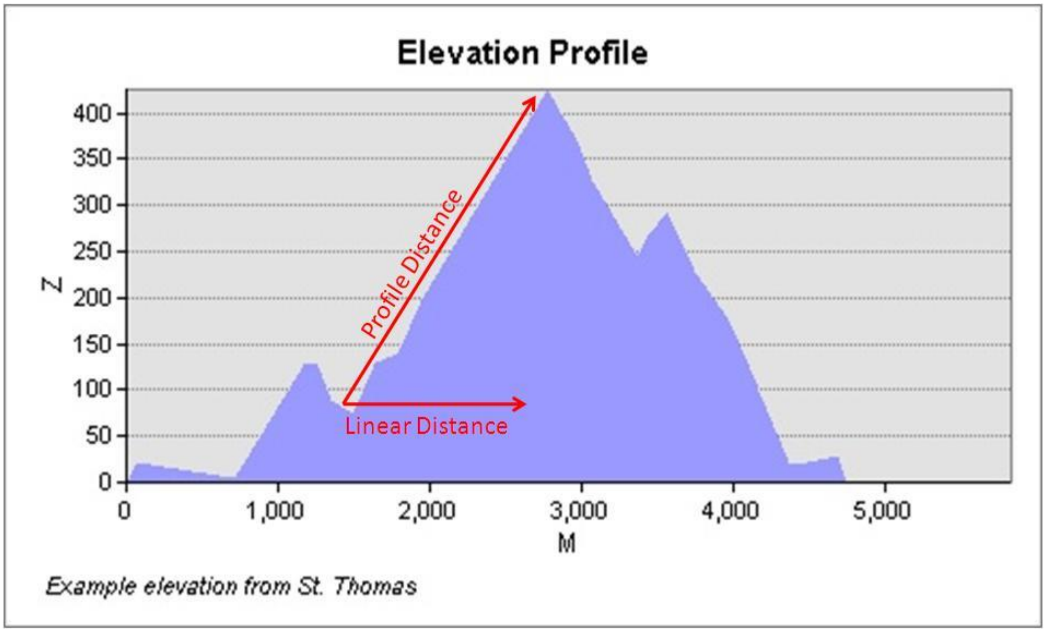


Figure 7. Elevation profile illustrating linear and profile distances. Distance and elevation are in meters.

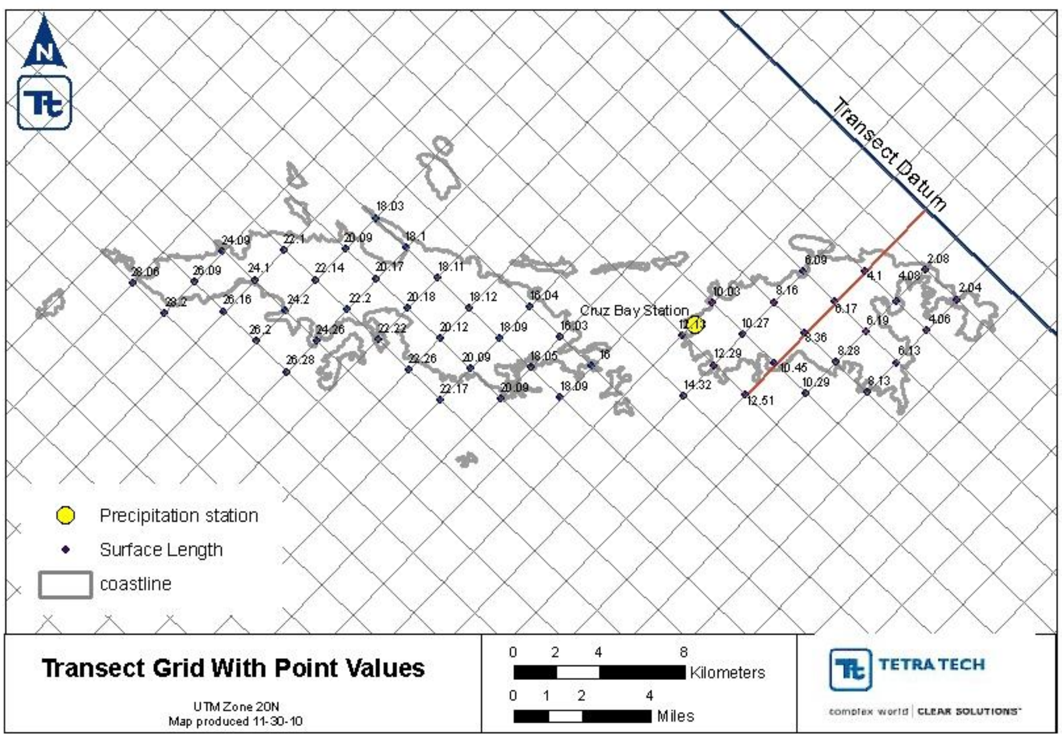


Figure 8. Linear distance vs. profile distance relationship.

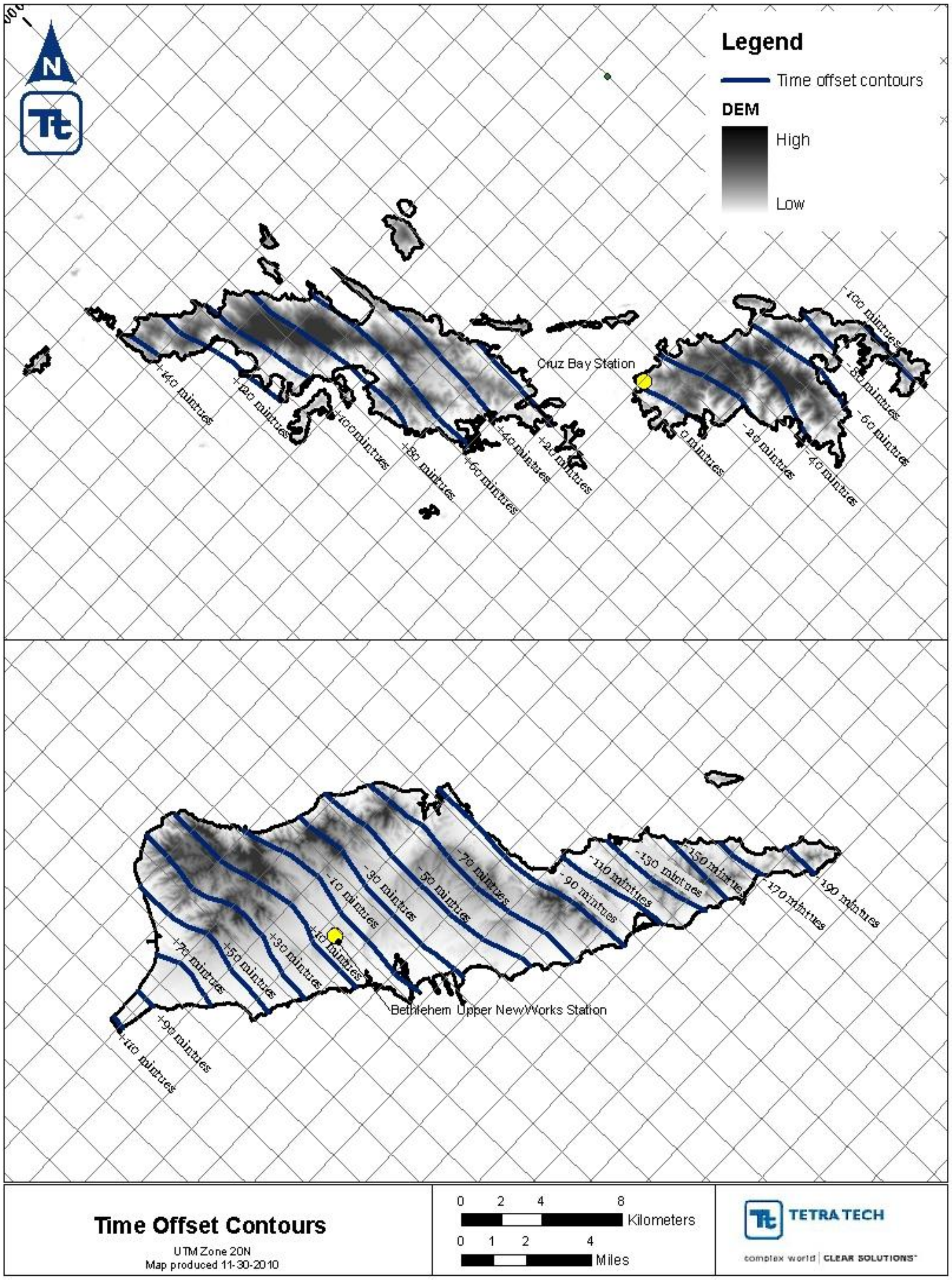


Figure 9. Time offset contours developed for St. Croix, St. Thomas, and St. John relative to local meteorological stations.

In-Stream Monitoring Data

Watershed monitoring data was reviewed in an effort to provide an inventory of existing data that could be used to estimate loading rates from watershed sources of pollutants. USGS maintains five watershed stations that provide surface water quality data. All of these stations are located on St. Thomas, and have been intermittently monitored between 1967 and 1999. Table 1 identifies that time periods for which data are available for each of the stations, and Table 2 identifies the number of samples and constituents tested for each station.

Table 1. Temporal data availability for watershed stations in the USVI.

Station ID	Station Name	1960s	1970s	1980s	1990s	2000s
50262000	UNNAMED CREEK AT BENNER HILL, ST. THOMAS USVI					
50265500	UNNAMED CREEK AT RED HOOK, ST. THOMAS USVI					
50272000	HOFFMAN POND AT HOFFMAN, ST. THOMAS USVI					
50274000	TURPENTINE RUN AT MT. ZION, ST. THOMAS USVI					
50276000	TURPENTINE RUN AT MARIENDAL, ST. THOMAS USVI					

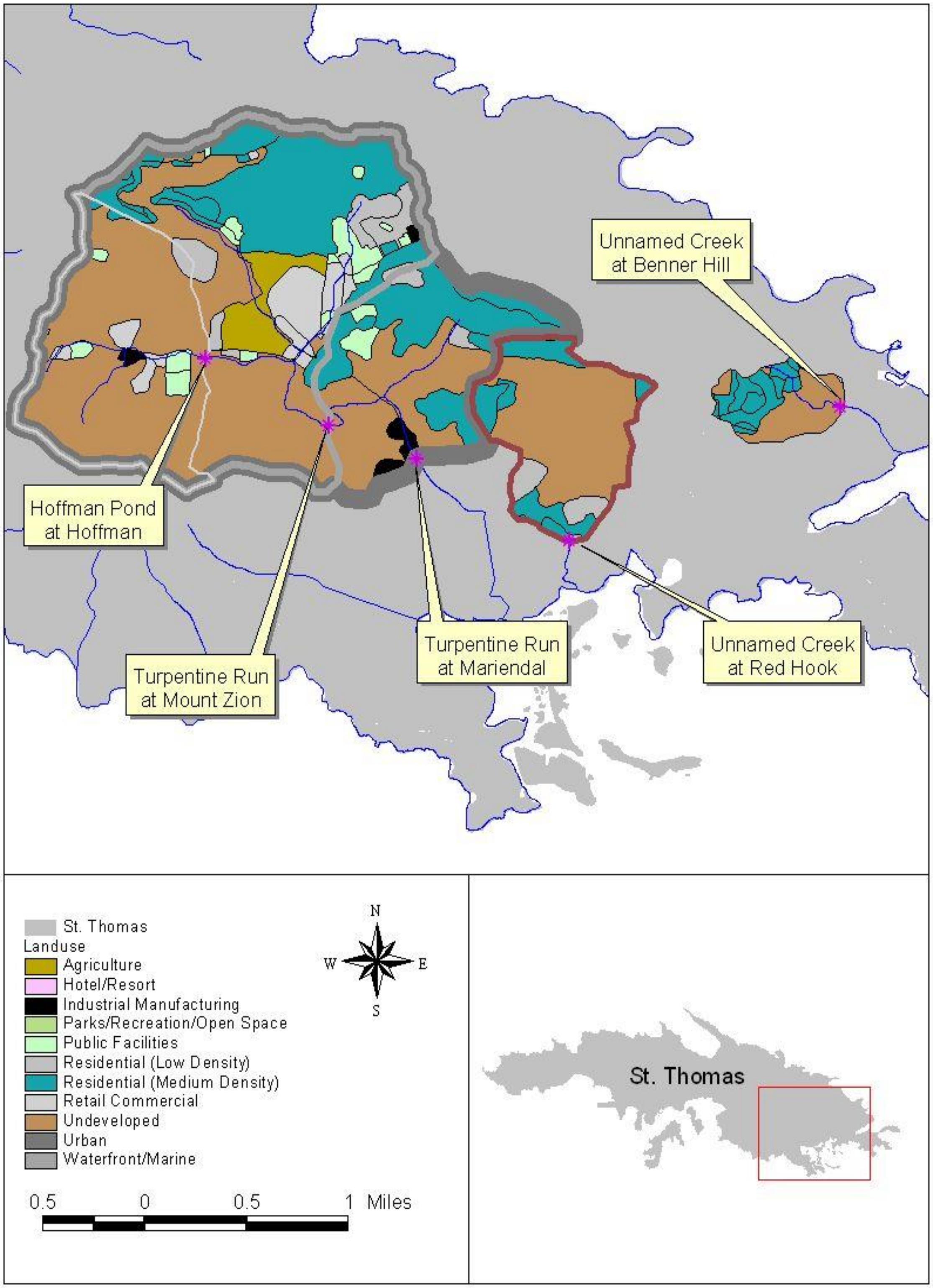
Table 2. Water quality data availability for watershed stations in the USVI.

Station ID	Station Name	Flow, ft3/s	N/P*	DO	BOD	pH	Solids	Fecal coliform	Specific conductance
50262000	UNNAMED CREEK AT BENNER HILL, ST. THOMAS USVI	1	-	1	1	1	1	1	1
50265500	UNNAMED CREEK AT RED HOOK, ST. THOMAS USVI	1	-	1	1	1	1	1	1
50272000	HOFFMAN POND AT HOFFMAN, ST. THOMAS USVI	-	4-7	-	-	7	7	-	7
50274000	TURPENTINE RUN AT MT. ZION, ST. THOMAS USVI	2	3-6			7	7	-	7
50276000	TURPENTINE RUN AT MARIENDAL, ST. THOMAS USVI	2	-	2	3	2	3	2	2

*A different nutrient suite was analyzed for each site visit. Therefore, a range is provided for a sample total to identify the range of data collection for the suite of nutrients.

The inventory of water quality data collected by the USGS in USVI watersheds is not extensive, and is probably not sufficient for source assessment at the level of detail VIDPNR has requested. The USGS has conducted 18 sampling events for the 5 stations, which is not a sufficient dataset considering the events are spread over 43 years. In addition, only 4 of these sampling events occurred in the last 15 years. It is likely that the characteristics of the areas (e.g land use, land cover) draining to these stations have changed significantly during this time, thus changing the loading rates. However, Tt also investigated the characteristics upstream of the monitoring stations to assess their suitability for future monitoring to derive land use loading coefficients as requested by VIDPNR.

Figure 10 shows the land use distribution upstream of the 5 USGS water quality monitoring stations, and the distributions are tabulated in Table 3 for the Turpentine Run system and Table 4 for the unnamed systems. The stations along Turpentine Run include (from upstream to downstream) Hoffman Pond, Turpentine Run at Mt. Zion, and Turpentine Run at Mariendal. The two additional stations are located on unnamed creeks that are separate from each other and from Turpentine Run.



Unnamed Creek at Benner Hill
Hoffman Pond at Hoffman
Turpentine Run at Mount Zion
Turpentine Run at Mariendal
Unnamed Creek at Red Hook
St. Thomas
Landuse
Agriculture
Hotel/Resort
Industrial Manufacturing
Parks/Recreation/Open Space
Public Facilities
Residential (Low Density)
Residential (Medium Density)
Retail Commercial
Undeveloped
Urban
Waterfront/Marine
N
W
E
S
0.5
0
0.5
1 Miles
St. Thomas

Figure 10. Land use distribution upstream of existing USGS water quality monitoring stations.

Table 3. Land use distribution upstream of existing USGS water quality monitoring stations in the Turpentine Run System.

Turpentine Run System	Hoffman Pond at Hoffman; Upstream Landuse		
	Landuse	Area (m^2)	Percentage
	Hotel/Resort	5,839	0.28%
	Industrial Manufacturing	16,469	0.78%
	Public Facilities	88,585	4.21%
	Residential (High Density)	28,912	1.38%
	Residential (Low Density)	35,278	1.68%
	Residential (Medium Density)	25,749	1.22%
	Retail Commercial	86,130	4.10%
	Undeveloped	1,815,417	86.35%
	sum:	2,102,379	100.00%
	Turpentine Run at Mt. Zion; Upstream Landuse		
	Landuse	Area (m^2)	Percentage
	Agriculture	260,948	4.49%
	Hotel/Resort	5,839	0.10%
	Industrial Manufacturing	25,805	0.44%
	Public Facilities	243,904	4.20%
	Residential (High Density)	182,596	3.14%
	Residential (Low Density)	177,503	3.06%
	Residential (Medium Density)	1,426,725	24.56%
	Retail Commercial	393,445	6.77%
	Undeveloped	3,091,460	53.23%
	sum:	5,808,226	100.00%
	Turpentine Run at Mariendal; Upstream Landuse		
	Landuse	Area (m^2)	Percentage
	Agriculture	260,948	3.39%
	Hotel/Resort	5,839	0.08%
	Industrial Manufacturing	117,622	1.53%
	Public Facilities	303,905	3.95%
	Residential (High Density)	208,253	2.71%
	Residential (Low Density)	200,928	2.61%
	Residential (Medium Density)	2,261,055	29.38%
	Retail Commercial	395,461	5.14%
	Undeveloped	3,942,616	51.23%
	sum:	7,696,628	100.00%

Table 4. Land use distribution upstream of existing USGS water quality monitoring stations in unnamed systems.

	Unnamed Creek at Benner Hill; Upstream Landuse		
	Landuse	Area (m^2)	Percentage
Unnamed, and Unconnected Creek Systems	Hotel/Resort	798	0.18%
	Residential (Medium Density)	202,266	44.91%
	Undeveloped	247,320	54.91%
	sum:	450,384	100.00%
	Unnamed Creek at Red Hook; Upstream Landuse		
	Landuse	Area (m^2)	Percentage
	Residential (Low Density)	111,985	8.62%
	Residential (Medium Density)	297,830	22.93%
	Undeveloped	888,958	68.45%
	sum:	1,298,773	100.00%

The land use data was developed by UVI and is circa 1999. Although it is assumed that distributions have changed since the data were developed, the land use dataset gives a general overview of land use regimes in these St. Thomas watersheds.

All five of the USGS monitoring stations are characterized by a variety of upstream land uses. Although a good distribution of land uses helps to account for a variety of pollutant sources, it would be difficult to explicitly characterize them all using ambient water quality sampling alone.

Water quality sampling may provide loading estimates for explicit sources if a single source type is located upstream, such as in undeveloped areas. Likewise, other land uses can be characterized if the upstream area is homogenous. This, in addition to sparse water quality data collected at these locations, would add significant uncertainty to land use-specific loading estimates.

Monitoring Recommendations

A general lack of watershed water quality data exists in the USVI, as discussed previously. In addition, no non-tidal waters are listed as impaired in the USVI. Therefore, background information regarding sources of pollutants is generally lacking, which makes targeting "worst-case" situations difficult.

The primary purposes for collecting data and information in the USVI are to gain an understanding of the conditions in the region with respect to land use loading and to apply this information in future TMDL development. The collection of information should include water sample collection for pollutant analysis. Monitoring locations should be selected to reflect impacts from local sources and watershed characteristics, as the TMDL work that will ultimately follow this monitoring effort will need to account for these sources and watershed conditions.

Due to the focus on land use sources of pollutants, it is imperative that accurate land use data is incorporated into the analysis. The UVI-ECC land use dataset is circa 1999, and it is assumed that land use distributions have changed since that time.

Update the Non-Point Source Management Plan

The Nonpoint Source (NPS) Management Program aims to protect waters of the territory by mitigating both land and marine nonpoint pollution sources. As such, the involvement of the NPS Pollution Steering Committee, a diverse group of individuals from the public and private sectors is pivotal to ensure that the Territorial NPS Management Program achieves the nine key elements of an effective NPS program as described in the *"Nonpoint Source Program and Grants Guidelines for States and Territories", issued on April 12, 2013 and applies to all Section 319-funded grant activities beginning in Fiscal Year 2014.*

During fiscal year 2014, the NPS staff reviewed the comments provided by the EPA pertaining to the 2000, *Draft Nonpoint Source Management Plan*. The staff was assigned various sections of the management plan. The NPS Management plan was revised and the first draft was submitted to EPA for review on December 19, 2014.

Execute and Monitor Memorandum of Agreement (MOA)

During fiscal year 2015, the NPS Program sponsored two environmental projects with CWA 319(h) funds. Requests for proposal were sent out via Public Service Announcement (PSA) on February 10, 2015. The following proposals were submitted to the U.S.V.I. NPS Pollution Steering Committee:

- The **Coral Bay Community Council** (requested $ 75,055 for their project entitled, *"Continued Storm-water BMP Implementation in Coral Bay, St. John, USVI*",
- The **Smith Bay Association** (requested $104,000 for their project entitled, *"Smith Bay Water Bay Non-Point Source Pollution Education and Outreach Project"*,
- The **University of the Virgin Islands** (requested $ 49,815.64 for their project entitled, *"Getting the public involved in Non-Point Source Pollution monitoring in the USVI"*.

On July 10, 2015, the NPS review team, a subgroup of the U.S.V.I. NPS Steering Committee agreed to fund the Coral Bay Community Council and the Virgin Islands Conservation Society environmental projects.

In addition to the environmental projects, the NPS staff was assigned to commence the RFP for Phase II of the 2002 U.S.V.I. Environmental Handbook. Phase II of the handbook consists of revisions to include U.S.V.I. specific design and performance standards, specifications, and trainings for storm-water best management practices to effectively address land-based sources of pollution impacting shorelines and coral reefs. On December 9, 2014, the NPS staff met with representatives of the Virgin Islands Department of Property and Procurement (P&P) in order to gain understanding of their bidding process procedures. Upon receiving clarification, the NPS staff drafted a scope of work and a cover letter for the handbook and submitted these documents to the DPNR Acting Commissioner.

Utilize Grant Reporting and Tracking System

During fiscal years 2014-2015, the NPS staff entered 30% of the old completed projects from previous years into the tracking system. The following projects were entered into the GRTS system:

- **Project grant number:** 99256106
  - NPS Pollution Conservation School Program for Bertha C Boschulte Jr. High School
  - Claude O. Markoe Elementary School
  - Evelyn Marcelli Elementary School

- Jane E. Tuitt Elementary School
- St. Croix Vocational Complex School
- School Rain Garden Demonstration Project

- **Project grant number:** 99256108
  - East End Marine Park Sign
  - Estate Adventure Gut Restoration Project
  - VINE Operations Newsletter
  - Rain Garden Demonstration
  - 10th Non Point Source Conference Pollution Conference
  - Capacity Building Training Workshops
  - St. Croix Youth Involvement in Coastal Cleanups
  - Leave Paradise in its place Campaign
  - The Natural Resources Construction Workshop Phase 2

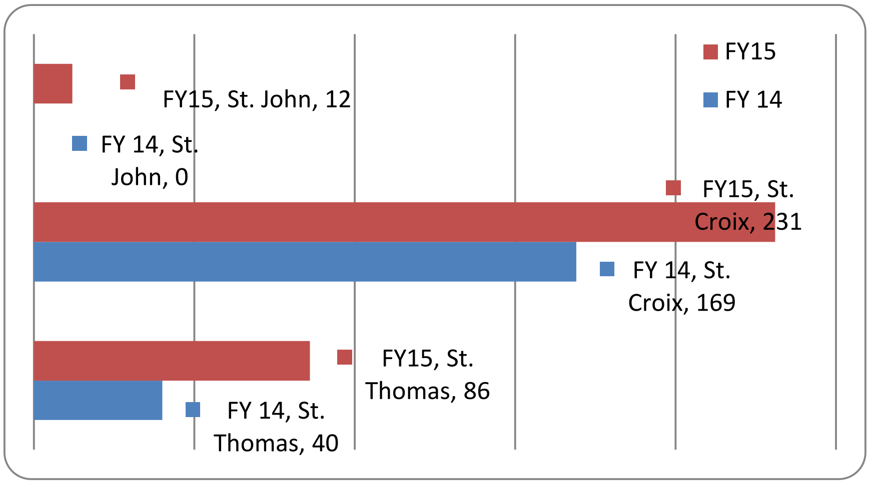
- **Project grant number:** 99256107
  - Project at the VI Waste Management Authority Green House Facility
  - NPS Conservation School Grant for Ivanna Eudora Kean High School
  - NPS Conservation School Grant for St. Croix Educational Complex High School

EARTH CHANGE PERMITTING

An earth change permit is required before any real property can be cleared, graded, filled or otherwise disturbed. The earth change permitting program continues to educate the public by emphasizing the importance of the implementation of non-point source pollution controls, including sediment control, erosion mitigation measures, and correct construction BMPs.

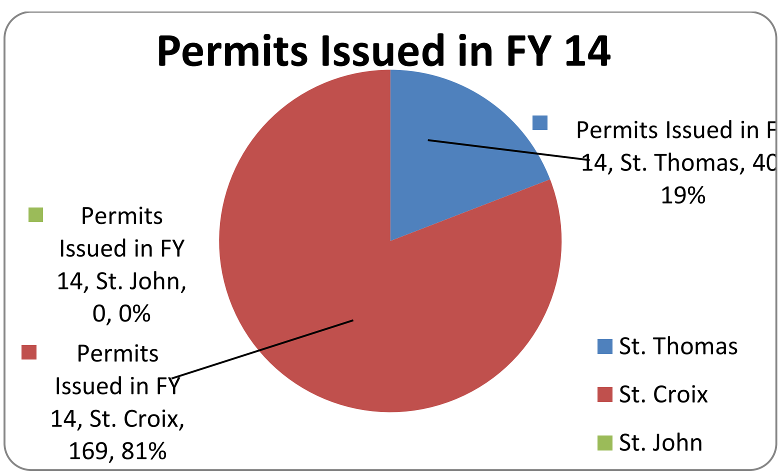
In fiscal year 2014, 183 site inspections and 10 enforcement actions were completed on the island of St. Croix. For fiscal year 2015, 180 site inspections and 4 enforcement actions were completed within the territory. Overall, the total number of permits issued within the territory in fiscal years 2014-2015 is 538. Due to an unanticipated resignation of trained Earth Change staff in the St. Thomas/St. John District, and the difficulty in finding qualified candidates, data on Earth Change Permitting activities were impacted. Procedures have since been put in place to continue recording activity in the St. Thomas office until an Environmental Specialist II has been hired. Graph 1.1 compares the number of earth change permits issued within the three districts.

Graph 1.1 The Number of Earth Change Permits Issued in FY 2014-2015



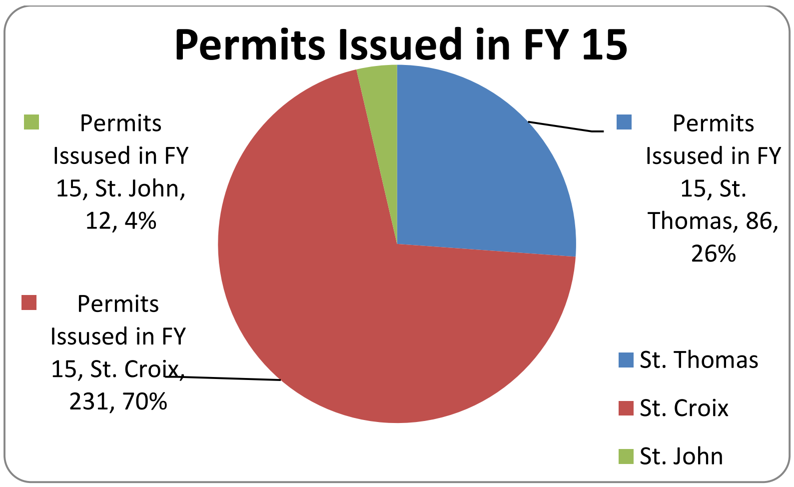
During fiscal year 2014, a total of 526 earth change permits were issued in the Territory. 169 permits were issued on St. Croix, 40 permits were issued on St. Thomas and none on St. John. Graph 1.2 depicts the total number of earth change permits issued in fiscal year 2014

Graph 1.2 The Number of Earth Change Permits Issued in FY 2014



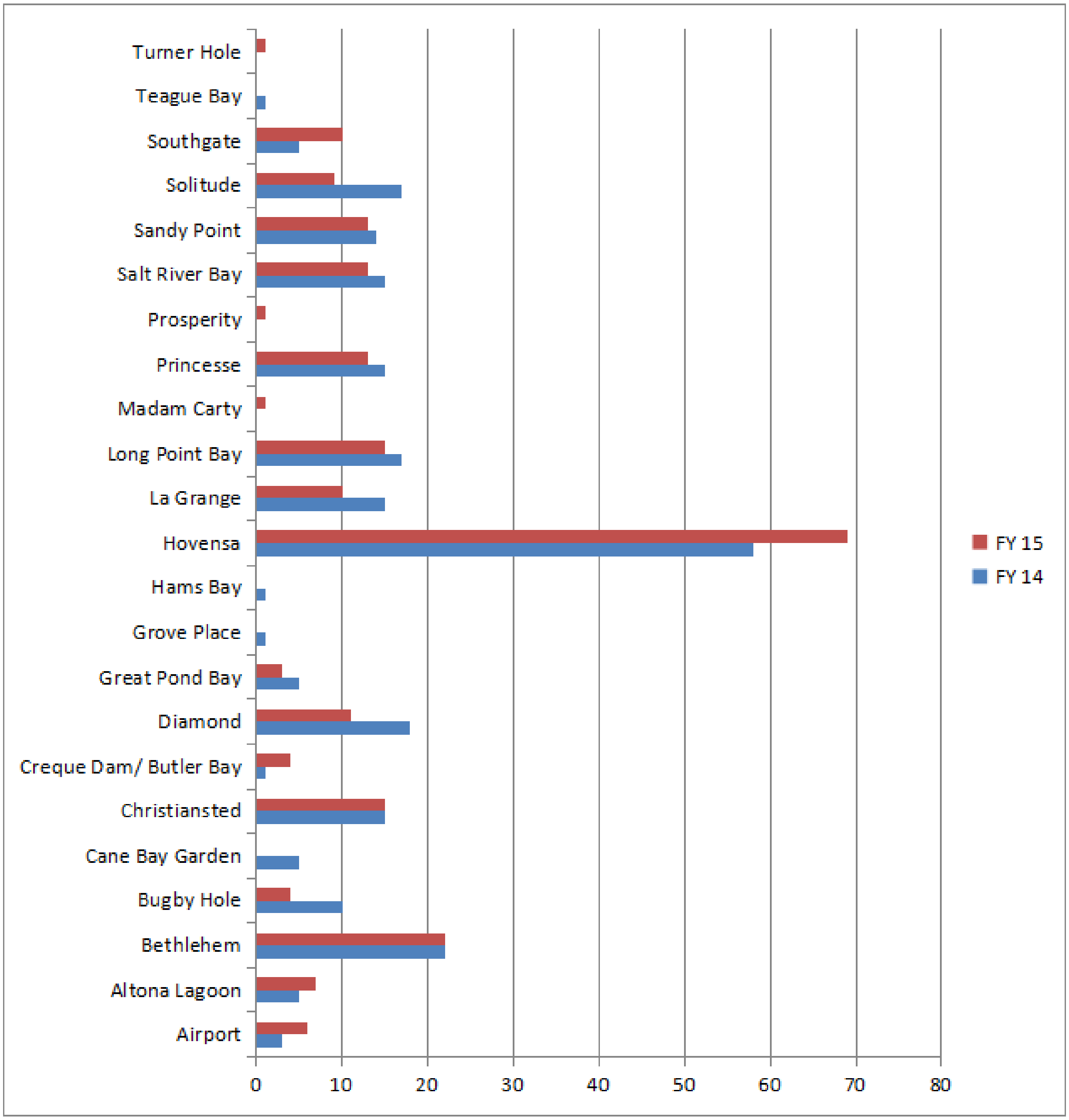
During fiscal year 2015, a total of 329 earth change permits were issued in the Territory. 231 permits were issued on St. Croix; 86 permits were issued on St. Thomas, and 12 permits on St. John. Graph 1.3 depicts the total number of earth change permits issued in fiscal year 2015.

Graph 1.3 The Number of Earth Change Permits Issued in FY 2015



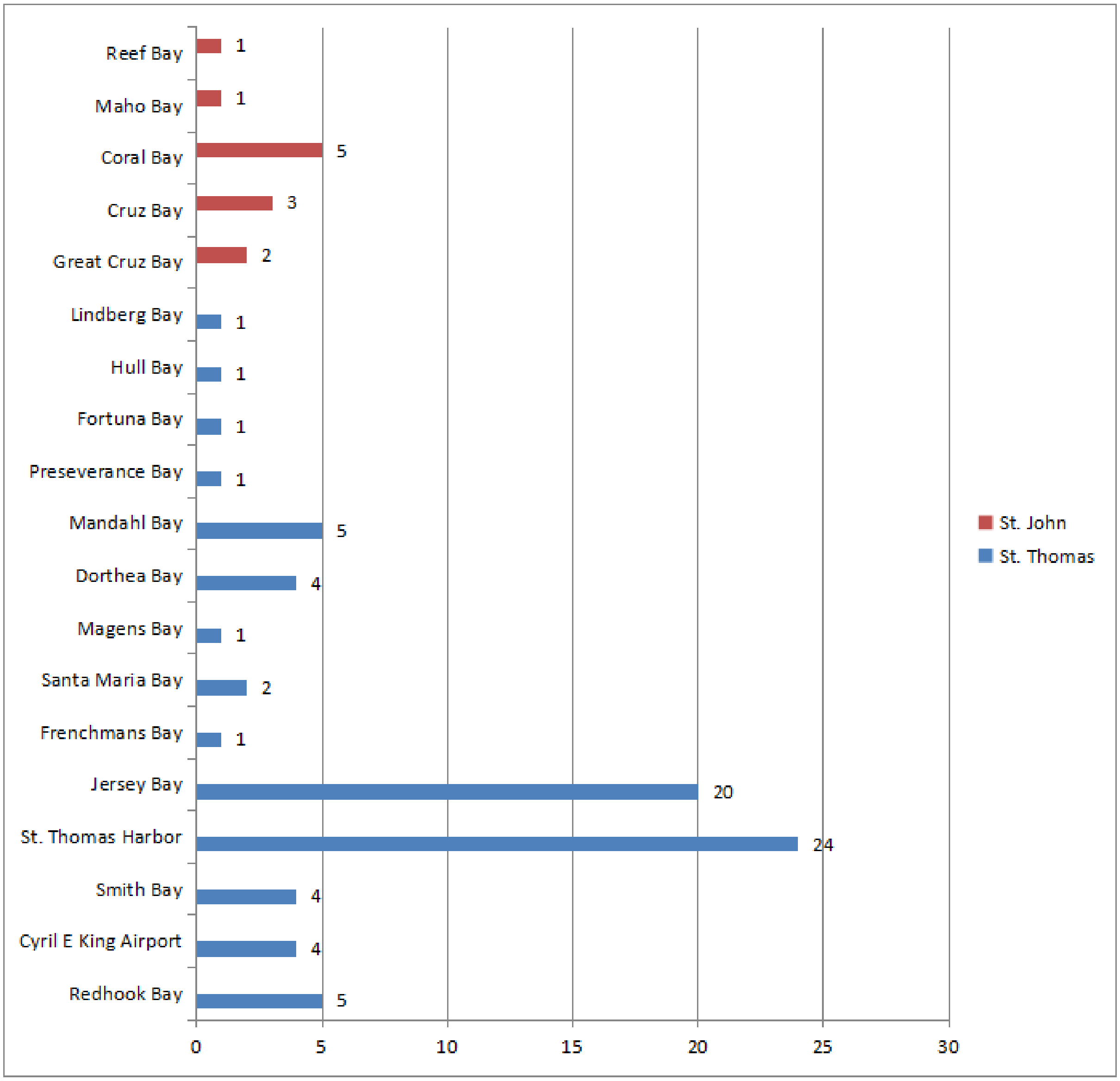
In addition to calculating the number of earth change permits issued, the NPS program also looks for the watersheds that are associated with the earth change permit. Graph 1.4 displays how many permits were issued in each watershed on the island of St. Croix for fiscal years 2014-2015. The top three watersheds which had the most construction activity were Hovensa, Bethlehem and Long Point Bay watersheds.

Graph 1.4 The number permits issued in a watershed on St. Croix



For the district of St. Thomas and St. John, due to an unanticipated resignation of trained Earth Change staff and the difficulty in finding qualified candidates, data on Earth Change Permitting activities were impacted. The data provided in graph 1.5 is only for fiscal year 2015. The top three watersheds which had the most construction activity were St. Thomas Harbor, Jersey Bay and Coral Bay.

Graph 1.5 The number permits issued in a watershed on St. Thomas and St. John



Educational Outreach

The NPS program is dedicated to improving community awareness by educating the public at various community events and participating in educational outreach in the private and schools. For fiscal years 2014-2015, the NPS programs participated in five outreach projects. Below summarizes all outreach activity during FY 2014-2015.

- **May 28, 2014**, **Division of Building Permits, Building Safety Month at Sunny Iles Mall in St. Croix, U.S.V.I.**
    - About 700 residents attended the event
    - Aimed to encourage all residents to raise awareness of the importance of building safety and resilient construction, fire prevention, disaster mitigation, backyard safety, energy efficiency and new technologies in the construction industry.
    - Residents, potential homeowners and developers had the opportunity to meet and question building officials regarding the application requirements for submitting projects, International Energy Conservation Code (IECC) standards, how to build green in the Virgin Islands and how to use best management practices on a site for erosion and sediment control.

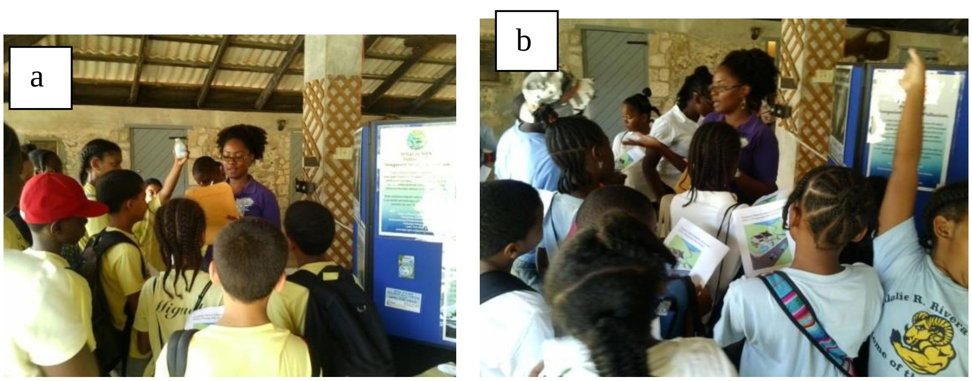
a

b

c

- **April 16, 2015, Week of the Young Child, at Claude O. Markoe Elementary School in St. Croix, U.S.V.I.**
  - The Week of the Young Child is a national campaign that highlights the needs of young children and recognizes the importance of early childhood education programs.
  - Roughly 90 children, from kindergarten to second grade attended. A presentation was given to students about a career as an Environmental Specialist and the causes of NPS Pollution.
  - Students were asked questions about what they had learned and those answering correctly received giveaway prizes such as pens, cups, pencils and pamphlets that promote the NPS program.

- **April 22-23, 2015, Earth Day Environmental Fair (Botanical Gardens), in St. Croix, U.S. V.I.**
  - Environmental Education for public and private schools. This event is hosted by the St. Croix Environmental Association (SEA)
  - There were displays, exhibits and presentations focused on natural and cultural resources, renewable energy, recycling and reef preservation
  - About 1,000 students from 3rd to 6th grade attended the two-day event. Presentations were given with EnviroScape and poster boards depicting the top six causes of NPS Pollution. At the end of the EnviroScape presentation, students were asked questions about what they had learned and those answering correctly received giveaway prizes such as pens, cups, pencils and pamphlets that promote the NPS program.



June 21, 2014 & June 6, 2015, Virgin Islands Housing Finance Authority Housing Expo at the Sunshine Mall & Antilles School in St. Croix and St. Thomas, U. S. V. I. –

- More than 3,000 potential homeowners attended
- The expo provides the necessary information for individuals to begin the process of achieving homeownership.
- The Division of Building Permits provided Environmental Education for new and existing land owners on the permitting process and the use of BMP's on a construction site
- The department displayed model house which is used as an outreach tool to display the correct installation of BMPS's such as silt fencing, brush berm, gabion baskets and erosion control straw matting and all the correct aspects of constructing a building.
- Staff had dialogue with potential homeowners on earth change requirements, and also the usage and purpose of best management practices.
- Staff handed out outreach materials on best management practices and watersheds.

a

b

Travel and Training

The NPS staff participated in on-island and off-island trainings throughout fiscal years 2014-2015. These trainings continue to provide the tools needed to address the public concerns within our community on NPS. For fiscal years 2014-2015, the NPS programs participated in 9 training sessions. Below summarizes all training activities completed during FY 2014-2015

- March 18, 2014: Green Building Seminar, the University of the Virgin Islands RT Park, St. Croix, U.S. V.I.
- July 16, 2014: Webcast “Waters of the U.S. Clarifying Misconceptions” by Nancy Stoner
- December 9-12, 2013: U.S. Grants Reporting Tracking System Training (GRTS), Chicago, Illinois
- December 2, 2014: EPA Green Infrastructure Webinar by Lori Carry-Kothera, Patrick Bannister, Kari Mackenbach and Toni Demasi

- February 20, 2015: EPA Webinar Investing in Manufacturing Committee Partnership Round 2 by Sarah Lee, Julie Wenah, Ryan Hedgepeth, Tom Murray and Charlie Barsh
- March 2-3, 2015: Grants Writing Training, the University of the Virgin Islands St. Croix, U.S. V.I.
- July 23, 2015: Water and Wastewater Planning Workshop for the Coral Bay Watershed hosted by the CBCC & DPNR.
- August 2-6, 2015: North American Surface Water Quality Conference & Exposition Austin, Texas - Staff received Continuing Education Units (CEU)
- September 17-18, 2015: Florida Storm-water Inspector Training, V.I. – Staff received certification as a Stormwater Management Inspector

REPORTING

In addition to entering projects into the GRTS System, the NPS program also had to submit the following:

- Monthly reports to DPNR management
- Midyear reports to EPA (March 2014 & 2015)
- First draft of the NPS Management Plan (December 2014)
- NPS work plans for fiscal years 2016-2017 (September 2015)
- End of Year reports to EPA (September 2014 & 2015)

E. Solid Waste Program

Under 19 V.I.C. § 1553(g)(1) (2013), DPNR is authorized to enforce provisions related to environmental effects of waste disposal, resource recovery and hazardous wastes. Pursuant to 19 V.I.C. § 1560 (2013), the Commissioner of DPNR exercised his authority to promulgate rules and regulations for a Used Oil Collection Program under Title 19, Part VI, Chapter 56 of the Virgin Islands Rules and Regulations.

Within three years after its inception, the Used Oil Program issued more than 173 permits to facilities territory-wide. These permits were only valid for three years, and subsequently expired. Facilities are, therefore, required to submit updated information regarding their used oil management, and renew the permits to generate, store or transport used oil every three years.

The tables below provide a listing of used oil permits by District. All of the permits are listed to reflect the universe of facilities that have been issued permits to date, even if some permits are currently expired. Several businesses have become defunct since the previous reporting period or are no longer generating used oil, and those facilities are no longer included in the database.

One of the objectives of the Solid Waste Program's enforcement strategy is to pursue enforcement against facilities that have failed to renew their permits. Pursuant to 19 V.I.C. § 1561(c) (2013), these facilities will be issued a Notice of Noncompliance initially, and enforcement will be escalated if compliance is not achieved within the corrective action period.

F. Oil and Hazardous Materials

1. Underground Storage Tank Program

Located within the U. S. Virgin Islands are over 118 registered underground storage tanks (UST) mainly meeting the petroleum needs of the territory. As of August 16, 2013, there are 50 UST systems in the territory, with a total UST capacity of 949,000 gallons. However, 89% of all of the service stations found on St. Croix are located over the boundaries of its major groundwater source, KingsHill aquifer. On St. Croix alone, groundwater contributes to 81% of water production supplying 65% of the island's population.

In efforts to protect the health and safety of this valuable resource, the people, and the environment, the UST Program at DPNR-DEP has accomplished the following:

- Permitting Program to insure the registration of all USTs.
- Ensuring that all UST systems provide proof of Financial Responsibility. In the event of a leak, damages and cleanup would be covered.
- The status review of twenty LUST (Leaking Underground Storage Tank) sites.
- The setup of the UST "Trust and Impress Account" a fund for environmental cleanup. This potentially may impose a gasoline tax of 1 cent/gallon.
- The development of soil/groundwater cleanup standards and determine the applicability of Risk-Based Corrective Action levels for UST closures and site assessments. How clean is clean?
- Developing a local Certification program for persons working with UST systems.

Pursuant to the Virgin Islands Underground Storage Tank Act (USTA) enacted in May 2000, all new and existing USTs must obtain a permit to use or own/operate at UST system. There are three kinds of permits: To use or own/operate, To Construct/Upgrade, and To Close. All regulated underground storage tanks must be permitted in order to operate. It is unlawful to operate a UST system without a permit.

Permit to Use or Own/Operate: An operating permit allows a tank owner to operate an UST system and assures the facility is in compliance with all sections of 40 CFR 280 and 12 V.I.C. Chapter 16. Noncompliance with these laws and regulations is in violation of the permit. The application fee is $500 and the operating permit is good for two (2) years from the date of issue. A completed application MUST include the following: a completed EPA Notification (EPA Form 7530-1), proof of a filed notice of an UST at the recorder of deeds (see appendix A for a template), proof of financial responsibility method, and copy of last twelve (12) months of leak detection results

Permit to Construct/Upgrade: A permit to construct or upgrade is necessary for any type of new UST construction or an upgrade to a current UST system. The application fee is $500 and the permit to construct/upgrade is good for one (1) year. Plans and specifications must bear the seal or number of a professional engineer registered in the United States Virgin Islands. Any installation, design, retrofit, repair, maintenance, or conduct of tank testing or analysis must be conducted by certified individual.

Permit to Close: A permit to close is necessary for the closure of a regulated UST system.

Additionally, the VI submitted the State Certification Form for Compliance with EPA's Energy Policy Act Grant Guidelines on February 28, 2013.

Requirement Met	EPA Energy Policy Act Grant Guidelines	Requirement Not Yet Met
	Operator Training Requirements Developed	X
	Initial Training Of All Operators Completed (after 8/8/12)	X
X	All Tanks Have Been Inspected Within The Last 3 Years	
X	Public Record Posted Within Last 12 Months	
	Delivery Prohibition	X
	Secondary Containment Or Financial Responsibility	X

As per EPAct 2005, inspection of all USTs is required every three years. The 90% combined Significant Operational Compliance (SOC) rate reported by DPNR to EPA after successfully inspecting twenty-four (24) UST facilities in 2012 is well above the national average of 71%.

As shown above, four areas of the requirements have not been met. DPNR began the EPAct 2005 certification for owners and operators on July 9, 2012, through the Petroleum Tank Training Institute (PTTI). Out of a total of 50 active UST facilities territory-wide, approximately 25 facilities have at least one certified Class A/B operator. Although UST Operator training is in place, the provisions are not enforceable until the UST regulations are adopted. Similarly, the delivery prohibition/secondary containment/financial responsibility provisions are not enforceable until the UST regulations are adopted.

DPNR drafted these regulations for Underground Storage Tanks (USTs) in accordance with 12 V.I.C. § 654(b). These regulations have been reviewed for technical and legal sufficiency by DPNR-DEP program staff and in-house counsel, and EPA staff at Region II and national headquarters.

Following the first public notice of the proposed UST regulations on June 15, 2012, under section 654(b) of the UST Act, DPNR developed a written response to the comments and petitions received. DPNR published the second public notice announcement on November 12, 2012. This notification was intended to facilitate continued public participation in the rulemaking process and finalize the proposed regulations for the Underground Storage Tank (UST) program at DPNR. DPNR also engaged EPA Region 2 and headquarters to finalize the regulations. DPNR filed the final proposed UST rules and regulations with the V.I. Attorney General's office for further legal review on February 27, 2013. Assistant Attorney General Jennifer Augspurger reviewed the proposed regulations and provided written comments on June 28, 2013. It is expected that the review will be completed by the end of the year 2013.

The 50 active UST systems are listed below:

Facility name (UST site Inventory as of 8/16/2013)		**Physical address**	**UST capacity (gallon)**
1	Abramson	28-29 Hannah's Rest	6.000
2	A&H Service Center	#49-51 Concordia	22,000
3	Amigos Service Center	#52 Hannahs Rest	24,000
4	Capital Service Station	#58 Glynn	24,000
5	Choice Service Station/A-i	#284 Mint	21,000
6	Everybody's Service Cent	#35A La Grande Princess	16,000
7	Five Corner's Service St	#1C Little Princess	20,000
8	Gas for Less	#1AR Diamond Crest	16,000
9	Gateway Service Station	#18 Peter's Rest	20,000
1 0	Get&Go Service Station	#17DB Plessen	28,000
1 1	Karim Service Station	#138 Carlton	16,000

12	La Reine Service Station	#3 La Reine	18,000
13	One Love Service Center	#36 E&F La Grande Princess	20,000
14	One Love	Golden Rock	34,000
15	Lower Love Service Station	#31A Lower Love	16,000
16	Covet	#3B Hogensborg	16,000
17	Quickserve Service Station	#19 Estate Plessen	30,000
18	Shuama Service Station	#30 Castle Coakley	32,000
19	Sion Farm Service Station	#36 Castle Coakley	26,000
20	Ziggy's Service Station	#85B Est. Solitude	16,000
21	Gas City	#36A La Grande Princess	16.000
22	Eastway Service Station	#75 Boetzberg	16,000
23	Cruzan Petroleum	#299 Peter's Rest	24,000
24	One Love West	#33A - 33BA Hannahs Rest	18,000
25	Welcome Service Station	#1-16 Eliza's Retreat	16,000
UST capacity St. Croix District			**511,000**
1	American Yacht Harbor	6100 Red Hook Qtr #2	40000
2	Domino - Barbel Plaza	#8AA Estate Ross	Temporarily closed
3	Domino - Contant	#40-1 Contant	
4	Domino - Frydenhoj	#48-1-8 Frydenhoj	
5	Domino - Smith Bay	56-2 Smith Bay	
6	E&C	5 Enighed	32.000
7	Total - Energy Mart	#391 Anna's Retreat	24,000
8	Total - Four Winds	384 Anna's Retreat	22,000
9	Total - Nadir	#6C Estate Nadir	16,000
10	Total - One Stop	#17 Smith Bay	20.000
11	Total - One Stop	#210-3A Altona	20,000

12	Total - Rodriguez	#7 Charlotte Amalie	20,000
13	Total - West Indies	12-14 Contant	4.000
14	Total Gottieb Quickway	#2-3 Contant	30,000
15	Racetrack	18 Street Estate Thomas	20,000
16	Jarrah	#46 Estate Thomas	20,000
17	Puma - Airport	#9A Contant	20,000
18	Puma - Hometown	#215-2-1 Anna's Retreat	20,000
19	Puma - Northside	#9-B Dorothea	10,000
20	Puma - Pollyberg	#69 Dronningens Gade	10,000
21	Puma - Red Hook	New Station about to open	10,000
22	Puma - Smith Bay	#4 Estate Frydendahl	24,000
23	Puma - Tutu	#1 Anna's Retreat	20,000
24	Puma - Veterans Drive	#7 Demerara	26,000
25	Yacht Haven Grande	9100 Port of Sale Mall, Suite 17	70,000
UST Capacity St. Thomas & St. John District			**438,000**
Total UST Capacity territory-wide			**949,000**

There are 20 known leaking underground storage tank (LUST) sites within the territory of the U.S. Virgin Islands. Many of these sites have been in remediation for many of years resulting in enormous cleanup costs to the UST owners. USTs can contribute to the release of petroleum products to the environment through spills, overfills, and/or tank/piping failures.

Cleanup costs for petroleum releases can be very expensive, even small releases over a period of time can contribute to large cost cleanups. Therefore, UST owners/operators are required to have the means to pay for the costs of corrective action and compensating third-parties for bodily injury and property damage due to a leaking UST. It is important that financial responsibility is met in the event of a leak so corrective action can begin promptly, potentially keeping cleanup costs relatively low.

The financial responsibility regulations allow UST owners and operators to choose from a variety of financial mechanisms to comply with the regulations. One of these financial mechanisms is the use of insurance; owner and operators can call the National Association of Insurance Commissioners at (816) 842-3600 or http://www.naic.org/state_web_map.htm for information.

The LUST inventory (as of 09/05/13) is provided below.

LUST site	NFA date	Status update as of 9/5/13
1. VI Seaplane /Port Authority		DPNR letter of 12/12/12 requested a remedial action workplan. On 4/18/13 DPNR received "TASK ORDER #2 ST CROIX SEAPLANE FACILITY CONCEPTUAL DESIGN and PREPARATION OF PERMITS, PLANS AND SPECIFICATIONS VIPA Contract No. 2012-001"
2. Texaco Midway/Lower Love SS	Pending	INDIRECT CLEANUP COMPLETED - site assessment completed; NFA will be issued upon installation of ATG.
3. Esso Glynn/VP Glynn	5/7/13	Delisted
4. Esso Farmingdale		Ongoing quarterly groundwater monitoring. NFA requested by Esso; DPNR rejected the request on 2/12/13 and requested additional info. The groundwater pump and treat system was shut down without DPNR's approval on 10/26/10. The levels appeared to rebound after the system was disabled and there are contaminants above DPNR's remediation level.
5. Esso Hassan/Lugo's		Site assessment workplan approved on 2/10/12 but

Frankie		awaiting implementation by respondent. Refered to EPA: LUST Inability to Pay letter from EPA dated 8/15/13
6. Texaco Princesse/VP Princesse	09/10/13	Delisted Supplemental site assessment workplan approved on 2/23/12 was completed; localized hot spot soil contamination remains at depth of 14 ft. NFA is conditioned upon the following: • Use of institutional controls to achieve the following NFA objectives for the site and surrounding areas: Prohibit ingestion exposure; Protect dermal contact; Protect inhalation exposure; Prohibit residential use.
7. Green Cay Marina		DPNR's Notice of Violation dated 4/5/13. On 4/9/13, DPNR received application for Permit to Close Underground Storage Tank Facility and Remediation Plan from SCFC. Plans currently under review.
8. Choice/Top Gas	Pending	INDIRECT CLEANUP COMPLETED - ATG installed, NFA Pending - respondent must submit test results for line and tank tests based on recently installed ATG.

9. Tony's		Need to excavate the impacted soils simultaneously with the proposed removal of the USTs. DPNR issued a "Permit to Close" UST system on 7/19/13 based on an approved closure workplan dated 7/9/13.
10. Capital/Farms		Site assessment workplan pending. ATG has been installed; Respondent must submit test results for line and tank tests based on ATG recently installed. Respondent also must submit past line and tank tightness tests for years where monitoring showed high readings. Refered to EPA: LUST Inability to Pay letter from EPA dated 8/15/13
11. LaReine	03/14/12	Delisted
12. Esso Devcon/Heavy Material	09/19/13	Delisted DPNR received Esso's sampling plan dated 6/15/12 - DPNR issued conditional approval on 6/18/12. NFA issued based on the Environmental Investigation Report dated 4/29/13 for the soil & gw sampling; and slug tests performed during January 2013.
13. Esso Gottlieb/Total Gottlieb		DPNR requested via letter of 2/28/13, UST closure work plan and a UST closure application along with the required $500.00 application fee DEP Review of Major CZM Permit Application No. CZT-3-14(L) - provided comments to CZM on

		11/22/13
14. Esso One Stop Sugar Estate/ Jarrah		Supplemental Phase 2 investigation required - legal counsel to draft letter ordering Phase 2 work (violation of CA and PTO permit condition).
15. Texaco Pollyberg		Ongoing groundwater remediation.
16. Texaco Tutu		Ongoing groundwater monitoring /remediation under Tutu Wellfield Superfund Site.
17. Esso Tutu		Ongoing groundwater monitoring/remediation under Tutu Wellfield Superfund Site.
18. Texaco Hometown		Monitoring activities on 11/21/12 indicated vapor readings of more than 1000 PPM detected in MW-1 from the electronic leak detector (Veeder Root).
19. Esso Nadir	1/28/13	Delisted
20. Domino Coral Bay	8/26/13	Delisted

The goal of this program is to ensure that all known leaking underground storage tank (LUST) sites are remediated. DPNR's cleanup standards for petroleum contaminated soils and groundwater are listed in the proposed UST regulations. In the interim, the VI has adopted Florida's soil cleanup standards and federal groundwater MCLs for sites that require remediation. Typically, standards that trigger further action are presented in the table below.

Parameter	Soil (mg/kg)	Groundwater (µg/L)
TPH	100	
Benzene	1.2	1
Ethybenzene	1500	700
Toluene	7500	1000
Xylenes, Total	130	10,000

An enforcement tracking system is utilized to track compliance inspections and subsequent enforcement actions. DPNR will begin enforcement action against facilities found in non-compliance with the Federal UST Regulations. These actions include issuance of Notice of Violation (NOV) and if necessary, referral of EPA for formal enforcement action.

A summary of the enforcement actions from 2010 to the present is provided below:

Facility	Order	Status	
		Type/Served	Dismissed
2014			
Superior	UST-C-01-14	AO 11/18/13	
Remy	UST-C-02-14	NOV 12/17/13	
2013			
Racetrack	UST-T-01-13	NOV 11/12/13	
Texaco Hometown	UST-T-02-13	AO-drafted	

Gas For Less Service Station	UST-C-01-13	AO–drafted	
Top Gas	UST-C-02-13	AO 01/16/13	
2012			
Domino 6R-l Carolina Barbel, 8 AA Ross 40-1 Contant 48-1-B Frydenhoj 14-94 Thomas 56-2 Smith Bay	UST-T-001-12	AO 06/05/12	NFA Carolina 08/26/13 NFA Thomas pending
VP Glynn	UST-C-002-12	AO 07/02/12	NFA 05/07/13
Green Cay Marina	UST-C-003-12	AO 07/02/12 NOV 04/05/13	
Abramson	UST-C-004-12	AO 09/20/12	DO 12/19/12
Super Tanks	UST-C-005-12	AO 10/22/12	DO 12/11/12
Everybody	UST-C-006-12	AO 10/22/12	DO 01/10/13
One Love West	UST-C-007-12	NOV 01/16/13	DO pending

One Love East	UST-C-008-12	NOV 01/16/13	DO pending
Prosperity	UST-C-009-12	AO 10/25/12	
Cruzan Petroleum	UST-C-010-12	AO 10/25/12	DO 01/11/13
Lionel	UST-C-011-12	NOV 01/16/13	DO pending
Eastway	UST-C-012-12	AO 11/14/12	
2011			
Total Gottieb's Quickway Service Center	UST-C-001-11	AO 07/12/11	
2010			
Tony's Service Station	UST-C-001-10	NOV 02/05/10 CA 10/25/10	
A&H Service Station	UST-C-002-10	NOV 02/5/10 CA 02/17/12	NFA 03/14/12
Heavy Materials	UST-C-003-10	NOV 02/03/10	NFA 09/19/13
Capital Service Station	UST-C-004-10	NOV 2/5/10 CA 9/29/10	EPA LUST Inability to Pay letter 08/15/13

Lugo's Service Station	UST-C-005-10	NOV 2/8/10 CA 9/16/10 FN 12/29/10 2nd FN 08/26/12	EPA LUST Inability to Pay letter 08/15/13
VP Princess	UST-C-006-10	NOV 02/03/10 EC 11/26/13	NFA 09/12/13
Lower Love Service Station	UST-C-007-10	NOV 02/03/10 CA 09/03/10 FN 12/28/10	NFA 09/12/13
Choice Service Station	UST-C-008-10	AO 8/18/10 CA 9/10/10 FN 12/29/10	
Jarrah's Mini Mart Sugar Estate	UST-C-010-10 STOP WORK ORDER UST-C-001-08	AO 9/23/10 09/16/10 CA 6/26/09	

Key:

AO	administrative order	DO	dismissal order
CA	consent agreement	NFA	no further action
FN	final notice		
NOV	notice of violation		

2. The Used Oil Program

The Solid Waste Program is charged with regulating commercial facilities that generate; store and transport used oil within the Territory. Used Oil is a solid waste that has been designated as a “Special Waste” because of its properties or the particular nature of the waste that can create solid waste management problems. Such problems may result from the illegal dumping or accidents that contaminated the environment and endanger human health. To help protect the valuable resources of the Virgin Islands, the solid waste program aggressively conducts inspections and issue permits to facilities that generate and store used oil. Such initiative helps to protect the area of land where all of the water that is under it or drains off of it goes into the same place called a watershed.

The tables below provide a listing of used oil permits issued within each district in the Virgin Islands. All of the permits that are listed reflect the universe of facilities that have been issued permits to date.

One of the objectives of the Solid Waste Program’s enforcement strategy is to pursue enforcement against facilities that have failed to renew their permits. Pursuant to 19 V.I.C. § 1561(c) (2013), these facilities will be issued a Notice of Noncompliance initially, and enforcement will be escalated if compliance is not achieved within the corrective action period.

Figure 1 graph represents the distribution of 133 used oil facilities in their perspective watershed across the island of St.Croix. 130 of those facilities were issued permits for the generation and storage of used oil. The majority of facilities, a total of 38 or 28% are located in the Hovensa watershed.

Figure 2, the chart represents the percentage of

Figure 1.

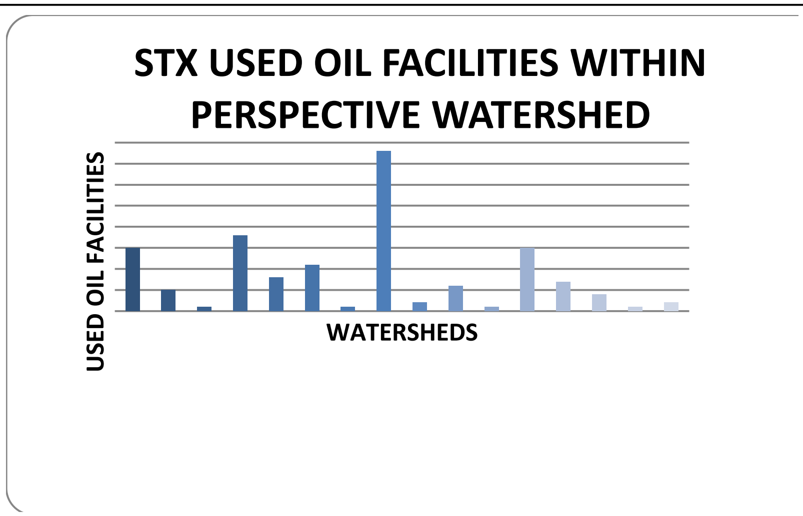


Figure 2.

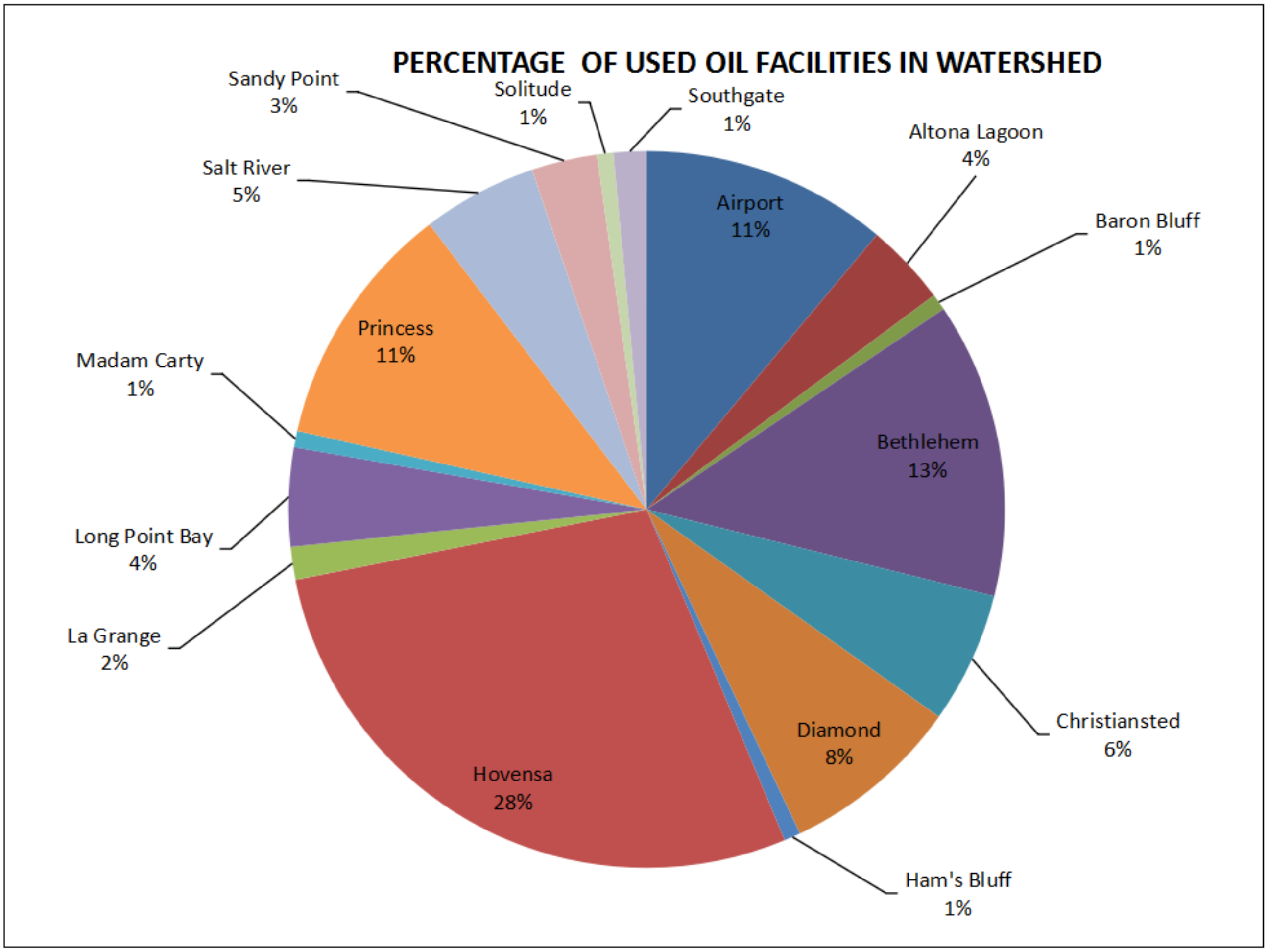

PERCENTAGE OF USED OIL FACILITIES IN WATERSHED
Sandy Point 3%
Solitude 1%
Southgate 1%
Altona Lagoon 4%
Baron Bluff 1%
Salt River 5%
Airport 11%
Princess 11%
Madam Carty 1%
Bethlehem 13%
Long Point Bay 4%
La Grange 2%
Christiansted 6%
Diamond 8%
Hovensa 28%
Ham's Bluff 1%

Figure 3.

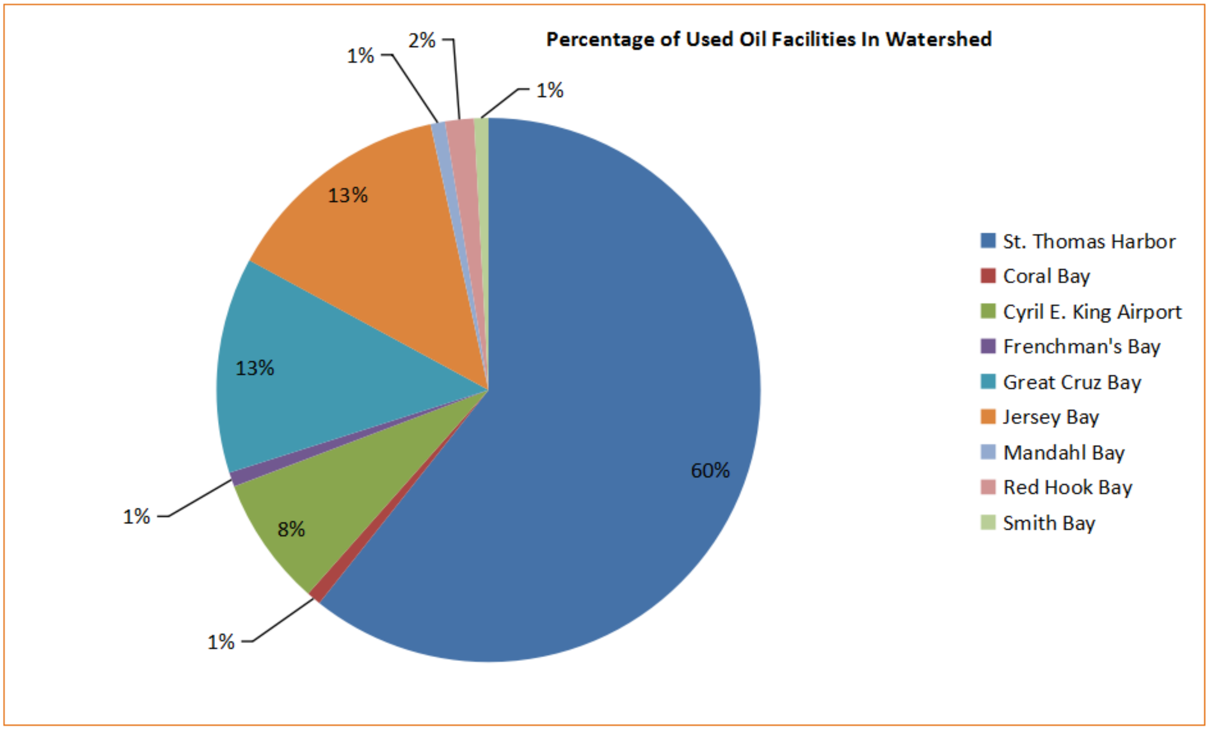


Table II.E.1.a List of Used Oil Permit Holders – St. Thomas-St. John District

Permit No.	Facility Name	Watershed	District
061J	Coral Bay Marina Services Inc.	Coral Bay	St. John
091J	Barry's Auto Service Center	Great Cruz Bay	St. John
113J	Boyson Inc	Great Cruz Bay	St. John
098J	Caneel Bay Resort	Great Cruz Bay	St. John
133J	Caneel Bay Resort - Shipyard	Great Cruz Bay	St. John

Permit No.	Facility Name	Watershed	District
130J	Caravan Auto Service	Great Cruz Bay	St. John
088J	E. C. Gas & Service Station, Inc.	Great Cruz Bay	St. John
052T	Gas Station Auto Repair	Great Cruz Bay	St. John
129J	O' Connor Car Rental*	Great Cruz Bay	St. John
118J	P&S Trucking & Water Delivery	Great Cruz Bay	St. John
210J	Pimpy's Trucking	Great Cruz Bay	St. John
129T	St. John Development dba Texaco	Great Cruz Bay	St. John
125J	Varlack Ventures, Inc	Great Cruz Bay	St. John
087J	Westin St. John Hotel Company, Inc	Great Cruz Bay	St. John
105J	Public Works (susanaberg)	Grest Cruz Bay	St. John
139T	Carty's Auto Repaair, Inc.	St. Thomas Harbor	St. John
218T	U.S. Department of Transportation - Bordeaux	Cyril E. King Airport	St. Thomas
219T	U.S. Department of Transportation - Fortuna	Cyril E. King Airport	St. Thomas
196T	U.S. Department of Transportation _ATC	Cyril E. King Airport	St. Thomas
217T	U.S. Departmet of Transportation - CEK Runway	Cyril E. King Airport	St. Thomas
080T	V.I. Port Authority, Transportation (STT)	Cyril E. King Airport	St. Thomas
133T	Air Center Helicopters	Cyril E. King Airport	St. Thomas
134T	Air St. Thomas	Cyril E. King Airport	St. Thomas
124T	Amco Auto Sales & Service Inc.	Cyril E. King Airport	St. Thomas
065T	Community Motors Inc.	Cyril E. King Airport	St. Thomas
079T	Marriott Frenchman's Reef & Morning Star Beach Resort	Frenchman's Bay	St. Thomas

Permit No.	Facility Name	Watershed	District
037T	Caribbean Auto Mart	Jersey Bay	St. Thomas
037R	Caribbean Auto Mart, Inc (STT)	Jersey Bay	St. Thomas
123T	Compass Point Marina, Inc.	Jersey Bay	St. Thomas
099T	Heavy Materials, L.L.C.	Jersey Bay	St. Thomas
281T	Heavy Materials, L.L.C. - Quarry 3G Bovoni -	Jersey Bay	St. Thomas
283T	Innovative Telephone Plot 2A	Jersey Bay	St. Thomas
297T	Merchants Market	Jersey Bay	St. Thomas
11T	Olein Refinery & Lubricants	Jersey Bay	St. Thomas
092T	School Busing, Inc	Jersey Bay	St. Thomas
049T	Tropical Marine Inc	Jersey Bay	St. Thomas
122T	V.I. Housing Authority	Jersey Bay	St. Thomas
150T	VI Recycling Company	Jersey Bay	St. Thomas
224C	VI Recycling Company	Jersey Bay	St. Thomas
098T	Western Auto Supply Co (STT)	Jersey Bay	St. Thomas
267T	Olein Refinery & Lubricants	Jersy Bay	St. Thomas
090T	Contran Resorts, Inc. dba Mahogany Run Golf Course	Mandahl Bay	St. Thomas

Permit No.	Facility Name	Watershed	District
132T	Ritz-Carlton Resort	Red Hook Bay	St. Thomas
076T	Sapphire Beach Resort Marina	Red Hook Bay	St. Thomas
077T	Renaissance Hotel aba St. Thomas Palace Resort	Smith Bay	St. Thomas
001T	Allenton Auto Repairs	St. Thomas Harbor	St. Thomas

Permit No.	Facility Name	Watershed	District
220T	Amalie Car Rental	St. Thomas Harbor	St. Thomas
108T	American Eagle dba Executive Airlines	St. Thomas Harbor	St. Thomas
073T	American Yacht Harbor Marina	St. Thomas Harbor	St. Thomas
145T	Antilles Gas (STT)	St. Thomas Harbor	St. Thomas
111T	Auto Excellence	St. Thomas Harbor	St. Thomas
120T	Automotive Enterprises Inc. dba Midas	St. Thomas Harbor	St. Thomas
135T	Bohlke International Airway, Inc.	St. Thomas Harbor	St. Thomas
068T	Budget Car Rental	St. Thomas Harbor	St. Thomas
096T	Bussue Auto & Repair	St. Thomas Harbor	St. Thomas
096T	Bussue Auto & Repair, L.L.C.	St. Thomas Harbor	St. Thomas
149T	Castillo Auto Repair	St. Thomas Harbor	St. Thomas
139T	Challenger's Transport	St. Thomas Harbor	St. Thomas
140T	Chuck Kline Water	St. Thomas Harbor	St. Thomas
126T	Crowley Liner Services (STT)	St. Thomas Harbor	St. Thomas
063T	Crown Bay Marina	St. Thomas Harbor	St. Thomas
077T	CTF Hotel Management Corp	St. Thomas Harbor	St. Thomas
116T	Dependable Car Rental	St. Thomas Harbor	St. Thomas
047T	Diesel Dynamic Plus Inc.	St. Thomas Harbor	St. Thomas
138T	Discount Water Deliveries and Trucking Services	St. Thomas Harbor	St. Thomas
110T	Domino Oil Co. Inc.	St. Thomas Harbor	St. Thomas
041T	East End Wreck Shop	St. Thomas Harbor	St. Thomas
114T	Florida Coca Cola Bottling Comp.-St. Thomas	St. Thomas Harbor	St. Thomas
117T	Four Star Aviation, Inc.	St. Thomas Harbor	St. Thomas

Permit No.	Facility Name	Watershed	District
100T	Ge-Tech Auto Repair	St. Thomas Harbor	St. Thomas
069TT	Green Hornet Environmental Management Inc	St. Thomas Harbor	St. Thomas
094T	Hertz Rent A-Car	St. Thomas Harbor	St. Thomas
051T	HI Performance Auto Repair	St. Thomas Harbor	St. Thomas
146T	Innovative Telephone	St. Thomas Harbor	St. Thomas
039T	It's Black It's White	St. Thomas Harbor	St. Thomas
223T	Joel’s Auto Repair Tech	St. Thomas Harbor	St. Thomas
066T	John's Auto Center Inc.	St. Thomas Harbor	ST. Thomas
102T	La Vida Marine Center L.P/B.J. Management	St. Thomas Harbor	St. Thomas
089T	Lennards Auto Repairs	St. Thomas Harbor	St. Thomas
237 T	M &S Auto Inc	St. Thomas Harbor	St. Thomas
090T	Mahogany Run	St. Thomas Harbor	St. Thomas
151T	Matthews Auto Repairs	St. Thomas Harbor	St. Thomas
119T	Metro Motors	St. Thomas Harbor	St. Thomas
125T	Motor Trend	St. Thomas Harbor	St. Thomas

Table II.E.1.b List of Used Oil Permit Holders – St. Croix District

FACILITY	LOCATION	PERMIT #	WATERSHED
American Airlines	Henry E. Rohlsen Airport		Airport
Bohlke International Airways	19A Henry E. Rohlsen Airport	STX. C-115	Airport
Cape Air	Henry E. Rohlsen Airport		Airport

FACILITY	LOCATION	PERMIT #	WATERSHED
Caribbean Flight Center	1st Place Henry E. Rohlsen Airport	STX. C-227	Airport
Federal Aviation Administration	Henry E. Rohlsen Airport	STX. C-216	Airport
Federal Aviation Administration (LOC)	Henry E. Rohlsen Airport, Runway 10/28	STX. C-197	Airport
Flemings Transport	Cargo Building, Henry E. Rohlsen Airport	STX. C-136	Airport
GEC		STX-244	Airport
Gold Coast Yachts	Roebuck Industrial Park	STX-231	Airport
Port Authority	Henry E. Rohlsen Airport		Airport
Seaborne Airlines	Henry Rholsen Airport	STX-243	Airport
V.I. Enterprises d/b/a Avis Rent-A-Car	Henry E. Rohlsen Airport	STX. C-226	Airport
VI Air National Guard	Mannings Hill	STX-263	Airport
VI National Guard	Estate Mannings Bay/Airport	STX-204	Airport
Zenon	13-0A Estate Bethlehem	STX. C-128	Airport
Ace Rental	124-125 Sundial Park	STX-088	Altona Lagoon
Roach Auto Service	51 Boetzberg	STX. C-162	Altona Lagoon
St. Croix Marine Corp	5063 Est. Welcome, Gallows Bay	STX. C-083	Altona Lagoon
The Buccaneer, Inc.	#7 Estate Shoys, C'sted	STX. C-097	Altona Lagoon
Welco Gas Station	#16 Eliza's Retreat	STX. C-161	Altona Lagoon
Carambola Beach Resort & Spa	Estate Davis Bay, St. Croix	STX. C-237	Baron Bluff
Aureo Diaz Housing Authority	#5 Bethlehem	STX. C-156	Bethlehem
Basic Rentals	544 Mt. Pleseant	STX. C-223	Bethlehem

FACILITY	LOCATION	PERMIT #	WATERSHED
Bryan's Marine Service	180 Estate Upper Love, St. Croix	STX. C-178	Bethlehem
Contractor's Concrete	#15 Mount Pleasant	STX. C-221	Bethlehem
Cruzan Environmental Services, Inc.	31-A Estate Lower Love	STX. C-011	Bethlehem
Dan's Trucking & Trash Removal	1-1 Estate Slob, St. Croix	STX. C-238	Bethlehem
Dept of Agriculture	Estate Lower Love, St. Croix	STX. C-187	Bethlehem
First Choice Auto Repair	Kings Hill	STX-267	Bethlehem
Francis Water Service, Sales & Delivery	256 Estate Glynn, C'sted	STX. C-170	Bethlehem
Ken Transmission	25 Estate Whim	STX. C-177	Bethlehem
Ramco Transmission	353 Estate Mt. Plessen	STX. C-171	Bethlehem
Stanley and Stanley Garage	60 Grove Place F'sted	STX. C-078	Bethlehem
The Quickie/ Oil Genie Storage	Mobile Transport	STX. C-207 T	Bethlehem
V.I. Asphalt Product, CORP.	13 H Estate Bethlehem		Bethlehem
VI National Guard	10A & 18 VICORP Land, Estate Bethlehem	STX. C-081	Bethlehem
VI Paving	13 GA Estate Bethlehem	STX. C-137	Bethlehem
WAPA Maintenance	Estate Glynn	STX-242	Bethlehem
Innovative St. Croix	2A Estate Mount Pleasant	STX-164	Bethlehem
Hotel On The Cay	P. Cay Christiansted	STX-257	Christiansted
Olympic Sales, Inc.	1103 Richmond	STX. C-146	Christiansted
Rodney Auto Repair	62 East Street C'sted	STX. C-033	Christiansted
Seaborne Airlines	Watergut	STX-141	Christiansted
St. Croix Radiator Auto Service, Auto Repair	12 Orange Grove	STX. C-036	Christiansted

FACILITY	LOCATION	PERMIT #	WATERSHED
Virgin Island Fire Dept	Plot #16 Estate Richmond	STX. C-186	Christiansted
WAPA	C'sted		Christiansted
Anthony Auto Repair	6 J Hogensburg, St. Croix	STX. C-143	Diamond
Carambola Golf Club, LLC.		STX-266	Diamond
Cruzan VIRIL, LTD	3 & 3A Estate Diamond	STX. C-213	Diamond
Dept of Human Services	19 Estate Diamond, St. Croix	STX. C-249	Diamond
Frank's Garage	12-D Estate Diamond	STX. C-155	Diamond
Heavy Material	1 & 5 A Estate Montpellier	STX. C-245	Diamond
Human Services	19 Estate Diamond, St. Croix	STX-249	Diamond
Karim Service Station	#138 Estate Carlton	STX. C-132	Diamond
P.C Landscaping	Estate Grove	STX-262	Diamond
Paradise Bottling Inc.	17 C Hogensburg	STX. C-167	Diamond
Universal Towing	11 Diamond		Diamond
Aggregate, Inc.	187 Hams Bay	STX. C-192	Hams Bluff
Adcon Environmental, Inc.	9 Estate Cottage, St. Croix	STX. C-250T	Hovensa
Adcon Environmental, Inc.	9 Estate Cottage, St. Croix	STX. C-251	Hovensa
Antilles Gas Corp	# 9 Estate Pearl, St. Croix	STX. C-144	Hovensa
Atlantic Trucking	9003 Estate Pearl, Suite 3	STX. C-205	Hovensa
Bates Trucking	61 & 61A Castle Coakley, St. Croix	STX. C-126	Hovensa
Bengoa's International, Inc.	6041 Castle Coakley	STX. C-240	Hovensa
Better Engine Service & Tires	41 Castle Coakley, St. Croix	STX. C-127	Hovensa
Bunkers of St. Croix	27 Castle Coakley, St. Croix	STX. C-160	Hovensa
Caribout VI, Inc.	10 Peters Rest, St. Croix	STX. C-140	Hovensa

FACILITY	LOCATION	PERMIT #	WATERSHED
Centerline Care Rental, Inc.	3 Estate La Reine, St. Croix	STX. C-131	Hovensa
Chitolie Trucking	Plots 2 & 4 Casava Gardens, St. Croix	STX. C-174T	Hovensa
Chitolie Trucking	2 & 4 Casava Gardens, C'sted	STX. C-093	Hovensa
Dept of Public Works	Anna's Hope St. Croix	STX. C-163	Hovensa
Dynamic Innovative, Corporation	36 Castle Coakley	STX. C-246T	Hovensa
Fernando Marte	86 Castle Coakley	STX. C-254	Hovensa
Francis Metal	95 Estate Cottage	STX. C-247	Hovensa
H & H Avionics	1st Place Henry E. Rohlsen Airport	STX. C-159	Hovensa
H & H Tire & Battery	61 B Castle Coakley	STX. C-031	Hovensa
H. H Tire Sales	Estate Castle Coakley	STX. C-031	Hovensa
HOVENSA, LLC.	Estate Hope	STX. C-002	Hovensa
M & T Trucking Services	RRZ 11303 Container Port	STX. C-175T	Hovensa
M & T Trucking Services	RRZ 11303 Container Port Kingshill	STX. C-236	Hovensa
Marco St. Croix, Inc	222-223 Estate La Reine	STX. C-151	Hovensa
Marine Spill Response Corporation	1 Estate Hope, Marine Terminal	STX. C-018	Hovensa
Monarch Henavy Equipment Rental	82 Castle Coakley	STX. C-166	Hovensa
O'Neale's Trucking & Trailer Transport, Inc	1 Wilfred Allick Container Port	STX. C-058	Hovensa
Paradise Waste System, Inc.	129 Castle Coakley	STX. C-153	Hovensa
Public Works	6002 Anna's Hope	STX. C-006	Hovensa
Reliable Rentals	3 Estate Pearl	STX. C-176	Hovensa

FACILITY	LOCATION	PERMIT #	WATERSHED
Renissance	St. Croix Renissance Park	STX-225	Hovensa
Schuster Services, L.L.C.	Plot 18 Estate Pearl	STX. C-182	Hovensa
Spartan Concrete Products, LLC.	9010 Estate Cottage	STX. C-223	Hovensa
St. Croix Diary Products, Inc.	4000 Sion-Farm	STX. C-038	Hovensa
St. Croix Rennaisance Group, LLLP.	1 Estate Anguilla	STX. C-225	Hovensa
Super Automotive	#41 Castle Coakley	STX. C-211	Hovensa
VI Regulated Waste Management	Wilfred Allick Container Port	STX-193	Hovensa
VI Regulated Waste Management	#1 Wilfred Allick Container Port	STX. C-007 T	Hovensa
DO It Right Auto Repair	41 Mars Hill, F'sted, St. Croix	STX. C-181	La Grange
Old Time Auto Repair	20 Two Brothers	STX. C-172	La Grange
Andrew JN Marie	Plot 104 Concordia	Not Permitted	Long Point Bay
Champion Auto	47A Mars Hill, St. Croix	STX. C-150	Long Point Bay
Fernando Marte	40 Estate Concardia	STX. C-253	Long Point Bay
K & E Service, Inc.	513 Estate Whim	STX. C-194	Long Point Bay
Karims Service Station	138 Estate Carlton, F'sted	STX. C-132	Long Point Bay
Midwest Corp.	2 Estate Carlton, F'sted	STX. C-179	Long Point Bay
Divi Carina Resort/Grapetree Shore, Inc.	Divi Carina Resort. 5025 Turner Hole	STX. C-165	Madam Carty
Auto World, LLC.	12 A, La Grande Princesse	STX. C-228	Princess
David Auto Repair	3C La Grande Princess, St. Croix	STX. C-152	Princess
Europa Motorwork	1 La Grand Princess	STX. C-147	Princess
Hendricks International, Inc.	14 La Grande Princess	STX. C-130	Princess

FACILITY	LOCATION	PERMIT #	WATERSHED
J & F Auto Zone	36-A La Grande Princess	STX. C-200	Princess
Jeff & Terry Auto Repair	3001 Miracle Mile	STX. C-195	Princess
Metro Motors, Inc.	7 Golden Rock, C'sted	STX. C-074	Princess
Nat's Auto Repair	122 Little Princess		Princess
OSU Buckeye, LLC dba Target Tires	3002 Estate LTL Princess Plot 1K	STX. C-235	Princess
PM's Auto, Inc.	1 La Grande Princess	STX. C-149	Princess
St. Croix Fereign Auto Sales Corp.	1 C Miracle Mile	STX. C-036	Princess
Tropical Car of St. Croix	12 A La Grande Princess	STX. C-032	Princess
UDI Management, Inc. DBA Car Hunters/Chewy	34 A La Grande Princesse	STX. C-252	Princess
Yanez Enterprises	Old Nissan	STX-268	Princess
Caribbean Auto Mart	1-B Estate Glynn, St. Croix	STX. C-071	Salt River Bay
Echo Valley	#236 Estate Glynn	STX. C-239	Salt River Bay
Gold Coast Yachts	Estate Salt River	STX-086	Salt River Bay
Lamberts Brothers d/b/a Toyota	Plot 1 Estate Body Slob	STX. C-208	Salt River Bay
Marvellous Auto Repair	66 Estate Glynn	STX. C-222	Salt River Bay
RC Ible Auto Repair	47 Estate Glynn	STX. C-139	Salt River Bay
Unique Auto Body Repair	Plot # 59 Estate Glynn	STX. C-168	Salt River Bay
Abrahmson Enterprises, Inc.	28-29 Hannah's Rest, St. Croix	STX. C-134	Sandy Point
Federal Aviation Administration	10 Estate White Lady	STX. C-215	Sandy Point
Federal Aviation Administration (Trafic Control)	Estate Recovery, Plot #50251	STX. C-220	Sandy Point
University of The Virgin Islands	Plot # 1 Golden Grove	STX. C-169	Sandy Point

FACILITY	LOCATION	PERMIT #	WATERSHED
Sage Investments d/b/a East Marine	90 Estate Solitude	STX. C-229	Solitude
High Times VI, LLC.		STX-269	Southgate
STX. Financial Center, Inc. d.b.a Green Cay Marina	56 & Rem Parcel No. 2, Southgate Farms	STX. C-248	Southgate

3. Hazardous Waste Program

The Virgin Islands implements its own hazardous waste program independent of the US Environmental Protection Agency. All facilities which generate, store, transport and/ or collect hazardous waste must meet the Territory's requirements except where federal requirements are more stringent or broader in scope.

The Virgin Islands has not adopted the Universal Waste Rule. As such, no waste may be managed as universal waste. Rather, all hazardous waste in the Virgin Islands must be managed under traditional hazardous waste requirements based on total monthly waste.

Any person engaged in the generation, storage, transportation, treatment, disposal or recovery of hazardous waste shall obtain a permit thereof from the Department of Planning and Natural Resources. Permits must be renewed annually.

Permit Number	Facility Name	Location
T-043	Kmart	9000 Lockhart Garden, St. Thomas
C-042	Kmart	Remainder Matriculate, St. Croix
T-041	Kmart	26-A Tutu Park Mall, St. Thomas
C-036	O'Neale Trucking	Wilfred Allick, St. Croix
C-038T	O'Neale Trucking	Wilfred Allick, St. Croix
C-069	Seaborne Airlines	St. Croix
C-191	VIPA	Rohlsen, St. Coix
C-023	Toyota	#1 Estate Body Slob, St. Croix

Permit Number	Facility Name	Location
C-057	Adcon Environmental	Fort Louise Augusta Restrooms
C-063	VI Salvage d/b/a 180 Auto	236 Estate Glynn, St. Croix
C-024	Bunkers Of St. Croix	27 Castle Coakley, St. Croix
C-022	Caribbean Auto Mart	13 Glynn, St. Croix
T-028	FAA	Cyril E. King Airport, St. Thomas
C-025	FAA	#10 Estate White Lady, St. Croix
C-061	JFL Hospital	Estate Diamond, St. Croix
T-054	VIHA-Tutu Apartments	#387 Anna's Retreat, St. Thomas
C-041	VIHA-Paradise	Paradise, St. Croix
T-051	VI Army National Guard	Estate Nazareth, St. Thomas
C-052	VI Army National Guard	Estate Manning, St. Croix
C-002T	O'Neale's Trucking	Wilfred Allick, St. Croix
C-001T	VI Regulated Waste Mgt	Wilfred Allick, St. Croix
C-037	VI Regulated Waste Mgt	Wilfred Allick, St. Croix
T-190	TSA	Cyril King Airport, St. Thomas
C-040T	VI Regulated Waste Mgt	Wilfred Allick, St. Croix
T-032	FAA-Tower Control	St. Thomas
C-026	FAA-Recovery	St. Croix
C-027	FAA-ILS	St. Croix
T-031	FAA-Radar Facility	St. Thomas
T-030	FAA-Navigation Facility	St. Thomas
T-042	VIHA-Bovoni Apartments	Bovoni. St. Thomas
C-044	Managed Freight	Richmond, St. Croix
T-045	Total Petroleum	St. Thomas

Permit Number	Facility Name	Location
T-046	RLS Hospital	Sugar Estate, St. Thomas
C-048	Seaborne	St. Croix
C-049	Hams Bluff Lighthouse	Hams Bluff, St. Croix
T-050	P&P	Sub Base, St. Thomas
C-191	TSA-Henry Rohlsen	St. Croix
T-053	DOE-LAGA Building	Tutu-St. Thomas
C-055	VI National Guard	Sprat Hall, St. Croix
C-056	VI National Guard	Hams Bluff, St. Croix
T-140T	VI Regulated Waste	Contant, St. Thomas
C-062	VI Rum	Diamond, St. Croix
C-066	Buccaneer Hotel	St. Croix
C-067	Bohlke International	Henry Rohlsen Airport, St. Croix
C-072	Salt River Restoration	Salt River, St. Croix
T-021	Heavy Materials, LLC.	St. Thomas
C-058	Gallows Bay	Gallows Bay, St. Croixc-059
C-059	DOL-STX	Sunny Isles, St. Croix
T-060	DOL-STT	St. Thomas

4. Brownfields Program

A brownfield is a property of which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. It is estimated that there are more than 450,000 brownfields in the United States.

Cleaning up and reinvesting in brownfield properties increases local tax bases, facilitates job growth, utilizes existing infrastructure, takes development pressures off of undeveloped, open land, and both improves and protects the environment.

In 2009 DPNR conducted nine Phase I Environmental Site Assessments for properties located throughout the Territory. The purpose of these environmental assessments was to describe current site conditions and to establish if there was evidence that a release of oil or hazardous materials had occurred at the site or that a threat of release exists. Such a release could represent a liability to the property owner or operator.

Facility Name	**Location**	**Recommendation**
15 & 16 Prince Street & 54 & 55-B Hospital Street	Frederiksted, St. Croix	No further oil and/or hazardous materials assessments activities are necessary at this time
6, 6-a & 8 Penitentiary Land	Christiansted, St, Croix	Further assessment activities are necessary at the site. Phase II Assessment was recommended
10-13A West Lane	Christiansted, St, Croix	No further oil and/or hazardous materials assessments activities are necessary at this time
15 Sub B**ase**	Sub Base, St. Thomas	Further assessment activities are necessary at the site
24 & 25 Sub Base	Sub Base, St. Thomas	Further assessment activities are necessary at the site.
72 Lindbergh Bay	Charlotte Amalie, St. Thomas	Further assessment activities are necessary at the site.
27 Strand Street	Christiansted, St. Croix	No further oil and/or hazardous materials assessments activities are necessary at this time
4 Wimmelskafte Gade, back Street	Charlotte Amalie, St. Croix	No further oil and/or hazardous materials assessments activities are necessary at this time
Oscar E. Henry Customs House	Frederiksted, St. Croix	No further oil and/or hazardous materials assessments activities are necessary at this time. However, mold assessment and abatement activities are necessary to eliminate health hazards

During FY2014 and FY2015, no further actions were done against existing or new facilities; however, the program continued routine assessments of sites as needed.

F. Wetlands Programs

BACKGROUND

The quality of life in the Virgin Islands and the strength of the Virgin Islands economy depend heavily on maintaining and restoring the health of the nearshore coastal environment; including wetlands, mangroves, coral reefs, and seagrass beds; communities that form a tightly linked ecosystem connected through hydrology and runoff. For the past several decades, population growth has compounded the effects of poor land use practices. This is manifested in catastrophic runoff, sedimentation, nutrient enrichment from failed septic systems and pollutant contamination of coastal wetlands, waters, and bays. Various studies have associated land use in upland areas of watersheds are adversely affecting low-lying terrestrial and marine resources. Nevertheless, the extent of the impacts across the Territory is unknown, and a comprehensive assessment of the watersheds and wetlands of the VI is not presently complete. Additionally, the existing datasets maintained by public institutions have not been made available in published documents or placed into a web-accessible database for resource managers and public use. DPNR has standards applicable to wetlands in the USVI Water Quality Standards (VIRR §186-1).

PHASE I

The first phase of the wetlands inventory project, titled, "*The Virgin Islands Wetlands and Riparian Areas Inventory: A Pilot Study to Characterize Watersheds and Wetland Systems, Phase I*", was completed in 2004 by the Department of Planning and Natural Resources, in partnership with Island Resources Foundation (IRF) and the University of the Virgin Islands (UVI). Phase I of the project focused on a limited assessment of watershed/wetland ecosystems. Geographic Information System (GIS) technology was used to produce an inventory of watersheds and wetlands (type and location) throughout the U.S. Virgin Islands (USVI), produce GIS map products, and data for statistical and spatial analyses. Eighteen (18) priority watersheds (of the 50 in the USVI) were assessed and characterized using a matrix based on categorizing watersheds into three groups; (i) undisturbed, (ii) moderately disturbed, and (iii) highly disturbed watersheds. Vegetation characterization, water chemistry sampling, sedimentation history, and an Index of Biological Integrity assessment were completed within each selected watershed. The information and data gathered from the pilot study of Phase I were used by the project collaborating institutions to determine the proposed Scope of Work for Phase II of the project.

PHASE II

The "*Virgin Islands Wetlands and Watersheds Characterization Phase II: Inventory, Monitoring, Assessment, Management, and Education in the U.S. Virgin Islands*", began in 2007 and was designed initially to complete the watershed/wetlands assessment for the Virgin Islands by compiling existing data from multiple projects and sources, filling data gaps, developing appropriate management strategies, and educating the public about the importance of wetlands and watersheds.

Phase II was completed in late 2010. The following major outputs of Phase II were delivered to DPNR via CDs and DVDs:

1. Framework for the Management of Wetlands in the US Virgin Islands;
2. WETLANDS Book;
3. WETLANDS Book (Web Version);
4. GIS Layers (Folder);
5. MAP_CRX;
6. Map_JOHN;
7. Map_TOM;
8. QUALITY ASSURANCE PROJECT PLAN; and
9. Final Technical Report.

TYPES OF WETLANDS

Wetlands provide a range of goods and services that contribute to the economic and social development of the USVI. However, the various development activities result in significant degradation of the very resources that support the development of the USVI. In an effort to improve the development process, policies, laws, and initiatives have been developed to protect our natural resources. The primary purpose of the associated laws and programs is to ensure that development can be sustained and the quality of life can be maintained for current and future generations of Virgin Islanders. By 12 VIRR §184 definition, "Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Each type of wetland is formed under a specific set of conditions, and will typically have associated plants (flora) and animals (fauna).

Type 1: Watercourses

A watercourse is defined in the Virgin Islands Code as "… any stream with a reasonable well-defined channel, and includes streams which have a permanent flow, as well as those which result from the accumulation of water after rainfall and which regularly flow through channels formed by the force of the waters." See 12 V.I.C. § 123(b) (2013).

In the USVI, watercourses are commonly referred to as ghuts/guts. These ghuts are the main drainage channels for discharge of runoff from rainfall events. In addition to that function, ghuts provide a range of goods and services that support the development processes of the USVI. Ghuts also contain permanent pools of freshwater, which function as habitats for rare species of aquatic animals (e.g. Mountain Mullet and American Eel). Ghuts take a range of shapes, sizes, and depths, depending on the terrain and the size of the watershed. The vegetation found inside ghuts also varies accordingly, but two distinct forest types have been associated with ghuts. These forest types are Gallery Moist Forest and Gallery Shrubland.

Ghuts of Interest are those that meet any one of the following criteria:

- Ghuts with permanent pools
- Ghuts currently used for recreational purposes
- Ghuts supporting other community uses
- Ghuts containing critical habitats
- Ghuts supporting endangered species of plants or animals
- Ghuts containing significant historic, archeological, or cultural resources
- Ghuts facing significant threats – e.g. dumping from construction activities or used for sewage disposal.

St. Croix	St. John	St. Thomas
Adventure Stream	Battery Gut	Bonne Resolution (Dorothea) Gut
Bethlehem Gut	Fish Bay Gut	Caret Bay/Sorgenfri Ghut
Butler Bay Ghut	Guinea Gut	Contant Gut

St. Croix	St. John	St. Thomas
Caledonia Gut	Johnny Horn Ghut	deJongh Gut
Canaan Ghut	Living (Reef Bay) Gut	Magens Bay Gut
Cane Bay Ghut		Nadir Gut
Creque Gut		Neltjeberg Gut
Fountain Ghut		Santa Maria Gut
Harden Gut		Savan Gut
Jolly Hill Gut		Turpentine Run
La Grange Gut		
Mahogany Gut		
River Gut		

Type 2: Marshes

A marsh is defined as "a water-saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grass-like vegetation" (http://water.usgs.gov/water-basics_glossary.html). Marshes in the USVI are typically fresh-water wetlands formed in depressions in the landscape, and maintained by surface or subsurface flow of water.

Type 3: Swamps

A swamp is defined as "an area intermittently or permanently covered with water, and having trees and shrubs" (http://water.usgs.gov/water-basics_glossary.html). In the USVI, swamps are generally located on the coast. Water level is determined mainly by surface runoff during the rainy season, but brackish conditions exist in areas of the swamp closest to the sea, or during the dry season. As a result of this salinity gradient, plants adapted to both fresh water and saline conditions may be found in some swamps. Example, Magens Bay swamp, St. Thomas

Type 4: Artificial Ponds and Impoundments

"A pond is a body of standing water, either natural or man-made, that is usually smaller than a lake" (http://en.wikipedia.org/wiki/Pond). In the USVI, man-made (artificial) ponds are created primarily for provision of water for agricultural purposes. Increasingly, ponds are created for storm-water management purposes on sites with large developments or on sites that are periodically flooded. An impoundment is a body of water resulting from the placement of a stone dyke or earthen berm across a natural drainage channel (ghut). Impoundments were used in the early 1900s as part of the system of collection and distribution of potable water, particularly on St. Croix. Currently, impoundments are constructed and used mainly to provide water for agricultural purposes. Both ponds and impoundments provide habitats for a range of resident and migratory species of water birds.

Type 5: Salt Ponds

A salt pond is a coastal wetland that is separated from the sea by a low sandbank, sand dune, or similar feature. Salt ponds are formed over long periods by the accretion of reefs, growth of mangroves, or the accretion of sand along the mouth of an embayment. Once the pond is separated from the sea, water exchange between the two is primarily through the separating barrier. Depending on the size and structure of the salt pond, openings to the sea may be created during the rainy season if the pond collects significant amounts of surface runoff. The barrier may also be overtopped by the sea during periods of significant wave action. Such wetlands are commonly called salt ponds because the water in the ponds becomes hypersaline during the periods when the water level is low; that is, the water becomes more saline than ordinary sea water. In some ponds, the salt can be seen as a crystalline deposit along the edges of the pond or towards the landward portion (back) of the pond.

Salt ponds provide a habitat for many species of birds, but few plants are adapted to survive in such hypersaline conditions. Plants typically found at salt ponds are Black Mangrove, White Mangrove, and the shrubs Saltwort and Sea Purslane

Type 6 Lagoons

A lagoon is defined as "a stretch of salt water separated from the sea by a low sandbank, coral reef or similar natural or manmade feature." In the USVI, lagoons are typically formed by one of two processes. One process involves wave action moving sand and gravel along the shoreline, periodically closing the mouth of an embayment. Sandbars are sometimes breached by strong wave action, particularly during storms. Sandbars/sandbanks often become colonized and stabilized by plants, which can result in the closure becoming semi-permanent or permanent over time. The second process involves the formation of a sandbar across the mouth of a seasonal stream (ghut). In such cases, the sandbar is periodically breached by wave action or by surface runoff discharged through the ghut after rainfall events. Lagoons can have very restricted access or narrow channels that permit fairly consistent flows between the lagoon and the sea. Lagoons are ecologically productive sites, providing habitats for a range of fish and bird species, including migratory species of birds. Examples of lagoons are the Altona Lagoon (St. Croix) and Benner Bay/Mangrove Lagoon (St. Thomas).

Type 7: Seagrass beds

Seagrass beds are ecosystems dominated by marine grasses. Seagrass beds typically inhabit shallow nearshore areas, but can be found in a range of depths from shallow lagoons to open coastal areas 60 feet in depth. There are 40-50 species of seagrasses world-wide, and most are found in the tropics. Though seagrass beds are dominated by seagrasses, the communities contain many species of algae. Seagrass beds function as important nursery areas for a wide variety of marine organisms (including important food species). Seagrass beds also function to colonize open areas, and their root systems help to stabilize unconsolidated soils

PRIORITIES FOR MANAGEMENT OF WETLANDS

The major issues and priorities currently relevant to wetlands are:

1. Integration of the Policy Framework

There are several laws relevant to the management of wetlands, and those laws are administered by several agencies. The programs managed by the various agencies are usually in line with national priorities. In 2009, the Department of Planning and Natural Resources initiated activities to develop a Wetlands Management Program. That program will establish a mechanism for integration of the wetlands-related policies and programs of the public agencies in the U.S. Virgin Islands, including the involvement of community organizations

2. Reduction of Threats

There are significant threats to wetlands and associated resources from natural and man-made sources. The man-made threats are primarily from land use activities (e.g. changed drainage, sediment from construction activities, filling of wetlands, disposal of solid waste and effluents), but also from illegal practices (e.g. solid waste disposal). These threats reduce the benefits provided by wetlands. While threat reduction is a priority of the management agencies, the most important require changes in attitudes and practices of individuals in the community.

3. Storm Water Management

Due to the topography of the islands, most development activities (including residential development) involve the channeling of surface runoff from rainfall events. Poor storm-water management practices result in damage to wetlands, social infrastructure (e.g. roads), and private property. Individuals and companies undertaking developments must therefore use best practices in the design of stormwater management systems.

4. Future Demand for Goods and Services from Wetlands

The existing uses of wetlands are expected to continue. There is increased use for recreation, including eco-tourism ventures. With increased development activity, particularly larger resort projects, there is increased use of wetlands for storm-water management. It is forecasted that global warming will increase rainfall variability and intensity. As such, wetlands will play an even greater role in flood protection.

5. Information Management

In order to make informed decisions concerning the management of wetland resources, the regulatory agencies are constantly updating the databases on physical conditions and status of the resources. The community should become engaged in the management process, especially by sharing information on the use of wetlands and associated resources, and threats to such resources. DPNR continues to revise the USVI Water Quality Standards to be more protective of wetlands.

FRAMEWORK FOR MANAGEMENT OF WETLANDS IN THE USVI

Rationale for Development of a Wetlands Management Framework

Wetlands in the U.S. Virgin Islands (USVI) provide a range of goods and services that support the social and economic development of the Territory. Due to the range of benefits provided by wetlands, as well as their distribution across the topographic landscape, wetlands fall within the area of responsibility of several Territorial and U.S. Federal agencies. As such, wetlands form critical components of several programs designed to maintain the economic growth of the USVI and quality of life of its residents. Environmental and development programs in which wetlands play a critical role include:

(a) Agriculture Development – Impoundments were established to collect water for agricultural uses. The 1979 report on the USVI Sediment Reduction Program noted that there were 278 impoundments in the USVI in 1979 (BC&E/CH2M Hill, 1979).

(b) Reduction in Non-Point Source Pollution – The 1979 Sediment Reduction Program was designed around the functioning of impoundments as sediment traps. The existing Earth Change Permit process was similarly designed to reduce soil erosion and sedimentation of waterways, and development activities affecting ghuts are regulated within this process.

(c) Coastal Zone Management – Wetlands form one of the nine (9) Enhancement Areas for the USVI Coastal Zone Management Program, as required by Section 309 of the Coastal Zone Management Act, 1972.

(d) Wildlife Management – Wetlands function as important habitats for a range of wildlife species, and associated management interventions range from periodic resource assessments to designation and management of wildlife reserves by both Territorial and Federal agencies.

(e) Water Resources Management – Surface water forms one of the components of waters of the USVI as defined by 12 V.I.C. § 182(f) (2013). While there is no water resource management program, the non-point source pollution program was developed to protect the quality of the waters of the USVI for a range of social and ecological purposes.

(f) Flood Control – Storm-water management in development activities and general flood control are managed by two separate agencies of the Government of the USVI (Department of Public Works and Department of Planning and Natural Resources).

(g) Waste Management – Wetlands are used as part of the waste disposal strategy in the USVI, in that; a number of municipal sewage treatment plants discharge effluent directly to ghuts. Discharge of untreated sewage to wetlands also takes place when there is equipment failure. Additionally, the two municipal landfills are located in wetlands.

Despite the above-mentioned program imperatives that involve wetlands, there is no wetlands program in the USVI. Attempts to establish a wetlands program include the 2006 draft wetlands conservation plan prepared by the Division of Fish and Wildlife and the current attempt by the Division of Environmental Protection. However, a wetlands program designed for a single agency to fulfill its mission objectives will not accommodate the aforementioned range of program needs. This is particularly true as a number of the uses of wetlands are conflicting across the various programs. What is needed is a unified approach that supports multiple policies and program objectives, and that prevents program conflicts. This unified approach to wetlands management is hereby termed the "Wetlands Management Framework for the U.S. Virgin Islands".

The purpose of the Wetlands Management Framework is to ensure that all management interventions for wetlands in the U.S. Virgin Islands are designed based on a single policy and strategy and that institutional arrangements are established to minimize waste and conflicts while maximizing the impacts of each management intervention.

Current Wetlands Management Framework

There is a variety of laws that provide the foundation for a wetland management framework, and there are both Federal and Territorial agencies that are involved in programs and initiatives affecting wetlands. Though there is this range of institutions and programming that affect wetlands in one way or another, the focus on wetlands appears to be tangential at best. Programs and resource management strategies that should have wetlands management as a central feature have either been inexplicably terminated (Sediment Reduction Program), inconsistent in application (Areas of Particular Concern), relegated wetlands to a low level of priority (Coastal Zone Management Program), or treat wetlands as tangential (Water Pollution Control Program and 2005 Comprehensive Wildlife Conservation Strategy for the USVI). The single attempt to develop a wetlands conservation plan (Platenberg, 2006) focused on one district, and has been approved or implemented. Wetlands are not specifically mentioned in the priority goals or objectives identified in the 2010 USVI Coral Reef Management Program. However, two of the four priority sites (St. Thomas East End Reserve and St. Croix East End Marine Park) include large areas of wetlands.

The absence of policies and guidelines for wetlands management inhibit the development or integration of relevant programs. The 2009 Section 309 Assessment for the USVI Coastal Zone Management Program states that policies to increase protections for wetlands were approved by the Coastal Zone Management Commission in 2006, but now needs to be promulgated and adopted as rules and regulations within the coastal zone management program. Similarly, there is no institutional arrangement that supports information sharing and collaborative programming, both necessary to ensure the development of synergies between the various programs.

Trends and Major Issues Currently Relevant to Wetlands

The trends that have been identified are:

(a) Reduction in Acreage of Wetlands in the U.S. Virgin Islands – Damage to wetlands and loss of acreage has been chronicled in several reports (Sladen 1986, Stengel 1998). The major activity contributing to loss of wetlands is (past and current) development activity, primarily industrial, resort, and marina development. The continued generation of a range of other threats to wetlands and associated resources (Gardner et al, 2008) remain a cause of concern.

(b) Continued Provision of Goods and Services – Wetlands continue to provide a range of goods and services (Virgin Islands Department of Agriculture 1973, Smith 1989, Kelsey et al 2005, Rennis et al 2006, Gardner et al 2008, Valiulis 2009). In addition to the provision of water and food, the environmental services provided by wetlands include wildlife habitats, water purification, groundwater recharge, flood reduction, and storm protection.

(c) Contribution to Economic Development – Wetlands have played a significant role in the economic development of the U.S. Virgin Islands (Gardner et al, 2008) through the provision of water for domestic, agricultural, and industrial purposes. Current direct contributions include provision of recreational opportunities, educational opportunities, and water for agriculture.

The major issues and priorities are:

(a) Need for an Integrated Policy Framework – There are several laws relevant to the management of wetlands, and those laws are administered by different agencies. Though the programs managed by the various agencies are usually in line with national priorities, there is a need to establish a mechanism for integration of the wetlands-related policies and programs of the public agencies in the U.S. Virgin Islands, including the involvement of non-governmental organizations.

(b) Existence of Significant Threats – There are significant threats to wetlands and associated resources from natural and man-made sources. The man-made threats are primarily from land use activities (e.g. changed drainage, sediment from construction activities, filling of wetlands, disposal of solid waste and effluents), but also from illegal practices (e.g. solid waste disposal). These threats reduce the benefits provided by wetlands. While threat reduction is a priority of the management agencies, success of management interventions require changes in attitudes and practices of individuals and institutions in the community.

(c) Need for Improved Storm Water Management – Due to the topography of the islands, most development activities (including residential development) involves the channeling of surface runoff from rainfall events. Poor storm-water management practices result in damage to wetlands, social infrastructure (e.g. roads), and private property. Individuals and companies undertaking developments must therefore use best practices in the design of storm-water management systems.

(d) Future Demand for Goods and Services from Wetlands – The existing uses of wetlands are expected to continue. There is increased use for recreation, including ecotourism ventures. With increased development activity, particularly larger resort projects, there is increased use of wetlands for storm-water management. It is forecasted that global warming will increase rainfall variability and intensity. As such, wetlands will play an even greater role in flood protection.

(e) Need for Improved Information Management – There is no structured program for research and monitoring of wetland resources. As such, data collection is sporadic, ad hoc, and not necessarily linked to institutional mandates or programs. Data and information is consistently lost. Additionally, databases compiled by Federal agencies are not utilized by USVI regulatory agencies for management decision making. In order to improve decision making in the development planning and development control processes, the environmental management agencies need to develop an overall data management strategy. That strategy should ensure compatibility of data collection regimes and data management systems, as well as establishment of data sharing mechanisms. The civil society institutions engaged in wetland initiatives should also be brought into the information management process.

Other issues requiring attention are:

(a) Community Perception of the Value of Wetlands – The continuing threats to wetlands and associated resources indicate that there is a general perception in the USVI that wetlands are not important. However, the conflicts that sometimes arise during public hearings for development projects often focus on environmental issues, including potential impact on wetlands. This contradiction suggests that there is no consensus in the community regarding the value of wetlands. This issue should be addressed in order to reduce conflicts within the development control process, and enable the regulatory agencies and community to make informed decisions regarding tradeoffs in the development process.

(b) Climate Change associated with Global Warming – Climate change scenarios for the Caribbean suggest that sea level rise will be approximately 1.5 feet over the next century. This will result in inundation of some coastal areas, increasing acreage under wetlands, but also impacting negatively on social infrastructure and some major resources (e.g. aquifers). More immediately, increased intensity of storms and changing rainfall patterns are expected to create significant impacts on ecosystems, including wetlands. A comprehensive monitoring program should be established to support informed resource management decision making, particularly for critical or fragile ecosystems.

PROPOSED WETLANDS MANAGEMENT FRAMEWORK

The Wetlands Wise Use Project of the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention) identifies the elements of an effective wetlands management program as:

- Appropriate Policy Framework;
- Appropriate Legal Framework;
- Appropriate Institutional Framework;
- Management Strategy;
- Management Plan/Action Plan; and
- Institutional Program/Annual Plan.

Appropriate Policy Framework

The development of an appropriate policy framework is best guided by an environmental ethic, which provides the broad philosophical basis and guiding principles for policy and program development. The guidelines prepared by the Ramsar Secretariat on the wise use of wetlands (Davis, 1993) identify the following as principal elements of a national wetland policy:

A. Improvement of institutional arrangements so that wetland policies can be fully integrated into the planning process; and the establishment of mechanisms and procedures for incorporating this integrated, multi-disciplinary approach into planning and execution of projects concerning wetlands.

B. Review of existing legislation and government policies (including subsidies and incentives) including, where appropriate, application of existing legislation and policies, adoption of new ones, and use of development funds for wetlands.

C. Increasing knowledge and awareness of wetlands and their values, including exchange of information, propagation of their benefits and values (a statement of which is given), review of traditional techniques, and training of appropriate staff.

D. Review of the status of wetlands in the national context, including compilation of a national inventory, and definition of each wetland's particular values and conservation priorities.

E. Addressing of problems at particular wetland sites, by integrating environmental considerations into their management, regulated utilization, establishment of management plans, designation as appropriate for the Ramsar List, establishment of nature reserves and, if necessary, restoration.

Appropriate Legal Framework

The legal framework supports not only the development of regulations, but also provides an underpinning for the establishment of creative and evolving management and compliance strategies. Elements of an effective legal framework include:

A. A framework law that addresses wetlands as a specific ecosystem requiring directed management intervention, that links the primary enabling legislation to other relevant legal instruments directed at other programs and development processes.

B. Subsidiary legislation that facilitates the development of an effective institutional framework.

C. Guidance and guidelines to support the use of a wide range of measures and instruments (regulatory, fiscal, and non-fiscal) to enable effective management interventions.

Appropriate Institutional Framework

Although one public sector institution will be given the responsibility of being the lead agency for coordination of a territorial program, effective management will include collaborative arrangements between several public, private, and civil society institutions. An appropriate institutional framework will address the following:

A. Collaborative programming, to assist in resolving conflicts, assist in making decisions relating to trade-offs, clarify roles and responsibilities of different stakeholders, and facilitate diverse stakeholder involvement.

B. Development of an institutional coordinating mechanism that facilitates harmonization of management arrangements and institutional cultures (planning and decision-making systems, legal requirements in the various regulatory processes, reporting requirements and mechanisms, etc.).

C. Shared information collection and management systems.

Management Strategy

The territorial management strategy is meant to provide strategic focus, translating the policy framework into strategic directions for wetlands management over an agreed period. The territorial strategy should:

A. Provide a structured framework for wetlands management, establishing the goals and objectives of the territorial program, and establishing guidelines and practices that link site management interventions to system management goals and objectives.

B. Facilitate integration with other relevant planning strategies, such as those for tourism, biodiversity conservation, and protected areas.

C. Facilitate integration with the economic development strategies and development control processes.

D. Provide guidance on the design and implementation of a public engagement strategy.

E. Provide a structured approach for coordinating the initiatives of the various institutions implementing wetlands-related activities.

F. Provide a broader perspective for addressing site-specific issues.

Management Plan/Action Plan

The wetlands management plan is the action plan for the strategy period, and should:

A. Identify priority interventions for the strategy period, setting targets and identifying milestones.

B. Assign institutional roles within each area of intervention.

C. Establish coordinating mechanisms and structures.

D. Identify resource requirements.

E. Establish monitoring and evaluation guidelines and procedures for the implementation of the management plan/action plan

Institutional Program/Annual Plan

Each institution with assigned roles in the management plan/action plan should establish an institutional plan designed to:

A. Fulfill the institution's obligations identified in the Wetlands Strategy and Management Plan.

B. Be responsive to the institution's legal mandate.

IMPLEMENTATION AGENDA

If the above program elements are used as the guide for the development of a wetlands management program for the USVI, the process of development of an appropriate wetland policy will take a minimum of five (5) years. As such, establishment of some elements will proceed apace, rather than wait on the completion of the policy process. The following actions are proposed as the initial steps in the development of the wetlands management framework for the USVI:

1. Preparation of a Draft Wetlands Policy.
2. Preparation of a Wetlands Management Strategy and Action Plan.
3. Design of inter-agency management structure and preparation of associated collaborative agreement.
4. Preparation of institutional work plans.
5. Development of data management policies and data management mechanisms[1].
6. Establishment of framework management support systems (planning, communications, etc.).
7. Establishment and testing of data management system.
8. Preparation of first biennial Territorial Wetlands Report.
9. Preparation of a 5-year work plan.
10. Preparation of program financing strategy and plan.
11. Convene workshop (finalize report and work plan).

G. Water Quality Management Planning Program

The Water Quality Management Planning (WQMP) Program was created in 2000. Under the WQMP Grant (pursuant to CWA §604(b)), the V.I. DPNR-DEP is entrusted with the task of planning and implementing Water Quality Management Projects to ensure the protection of the marine waters of the USVI. Several duties that were formerly under the auspices of the Water Pollution Control (WPC) Program were placed under the WQMP. In FY2009, WQMP was merged with WPC.

WQM is tasked with the following sub-programs:

- COASTAL WATER QUALITY (AMBIENT) MONITORING PROGRAM
- TMDL DEVELOPMENT AND IMPLEMENTATION PROGRAM
- VIRGIN ISLANDS BEACH WATER QUALITY MONITORING PROGRAM
- WATER QUALITY MANAGEMENT AND PLANNING GRANT PROGRAM

The Coastal Water Quality (Ambient) Monitoring Program is the primary mechanism for monitoring the Virgin Islands coastal water quality. The locations the fixed station network is monitored on a quarterly basis. WQM also manages the VI Beach Water Quality Monitoring Program which monitors 43 designated beaches throughout the Territory on a weekly basis. The Ambient and Beach Programs data are used to make water quality assessments for which this Integrated Report is based. All the monitoring locations are listed in Table II.A.1.

The Storage and Retrieval of Water-Related Data (StoRet) program is managed and updated by WQM staff. The monitoring data is uploaded to StoRet via the Water Quality Exchange Web Template.

The Assessment Database (ADB) was fully implemented once the Virgin Islands defined assessment units for more comprehensive water quality assessments. ADB is a valuable tool for storing assessment information and retrieving it for reporting purposes. DPNR populates an ADB Template in Microsoft Excel and submits it to USEPA for uploading into ADB.

1. *Other Ambient Monitoring Activities*

As part WQM, staff takes part in reviews of the Environmental Assessment Reports (EARs) submitted by individuals or groups seeking to acquire land development or earth change permits within the Coastal Zone. EARs are submitted to the DPNR-Division of Coastal Zone Management (CZM), which, in turn, distributes them to various divisions for review. If the CZM permittee's application involves potential impacts to Waters of the U.S. Virgin Islands, a Water Quality Certificate is necessary as part of the CZM Water Permits.

During this reporting period, certificates that were issued are as follows:

Table II.G.1 Summary of Issued Water Quality Certificates, FY 2014 - 2015

FY2014

CZM Applications Reviewed

1. Seaborne Seaplane Facility, Christiansted, St. Croix
2. VIPA Crown Bay Dredging Project, Charlotte Amalie, St. Thomas
3. VIPA Gallow Bay Marine Terminal revetment installation, Gallows Bay, St. Croix.
4. VI WAPA LPG modifications-Richmond Facility, Christiansted, St. Croix

WQCs Issued

1. VIPA Crown Bay Dredging Project WQT-14-001(W) (Oct. 15, 2013)
2. St. Croix Marine & Development Corp. WQC-14-002(L) (June 30, 2014)
3. VI WAPA LPG modifications-Richmond Facility WQC-14-003(W) (July 23, 2014)

FY2015

CZM Applications Reviewed

1. VIDPW Veterans Drive Improvements, St. Thomas
2. VI WAPA LPG modifications-Randolph Harley Facility, Krum Bay, St. Thomas
3. Westin Resort dock removal, Great Cruz Bay, St. Thomas

WQCs Issued

1. VIDPW Veterans Drive improvements WQT-15-001(L&W) (Oct. 10, 2014)
2. VI WAPA LPG modifications-Randolph Harley Facility WQT-15-003(W) (November 6, 2014)
3. Westin Resort dock removal WQT-15-004(L&W) (January 12, 2015)

Storage and Retrieval Program (STORET)

During this reporting cycle, DPNR-DEP used the WQX_Web Template to catalog its water quality monitoring data. After the template was populated, DPNR-DEP uploaded it to the Water Quality Exchange from which it can be queried using StoRet. All data used to make assessments in the FY2014 Integrated Report has been uploaded into WQX Web.

FY2014

Data collected during BWQM was entered into the WQX Web Template for uploading into WQX Web by the USEPA Contractor.

FY2015

Data collected during BWQM was entered into the WQX Web Template for uploading into WQX Web by the USEPA Contractor.

Comprehensive Watershed Restoration Action Strategy

USEPA guidelines request each state to develop a "comprehensive watershed assessment strategy." The Department of Planning and Natural Resources continues to work towards its plans to implement this assessment in the current multi-year monitoring strategy.

III. SURFACE WATER MONITORING & ASSESSMENT

A. Surface Water Monitoring Program

DPNR-DEP work plans require quarterly monitoring of sixty-eight (68) stations around St. Croix, sixty-nine (69) stations around St. Thomas, and twenty-seven (27) around St. John. These sites are located offshore and are sampled by WPC staff using a vessel. DPNR-DEP expanded the monitoring network to include deep-water offshore sites at the outer rim of the USVI's three-mile boundary. Some sites in the St. John network were abandoned in this reporting cycle due to their location within the jurisdiction of expanded federal waters of national parks and monuments.

1. Monitoring Sites

Table III.A.1. Virgin Islands Ambient Monitoring Sites (153).

St. Croix 68 Sites

Stations	Class	Location	Stations	Class	Location
STC-1	B	Lagoon Recreational Beach	STC-25	B	Long Point Bay
STC-2	B	Ft. Louise Augusta Beach	STC-26	B	Good Hope Beach
STC-3	B	Buccaneer Hotel	STC-27	B	Frederiksted Public Pool
STC-4	B	Tamarind Reef Lagoon	STC-28	C	Frederiksted Pier
STC-5	B	Green Cay Marina	STC-29	B	Frederiksted Public Beach
STC-6	A	Buck Island Beach	STC-30	B	Sprat Hall Beach
STC-7	A	Buck Island Anchorage	STC-31	B	Davis Bay
STC-8	B	Reef Club Beach	STC-33	B	Salt River Marina
STC-9	B	St. Croix Yacht Club Beach	STC-33A	B	Salt River (Columbus Landing Beach)
STC-10	B	Cramer Park	STC-33B	B	Salt River Bay
STC-11B	B	Jack Bay, Forereef	STC-34	B	St. Croix By the Sea

STC-12	B	Divi (Turner Hole Beach)	STC-35	B	Long Reef Forereef West
STC-13A	B	Great Pond	STC-35A	B	LBJ (Pump Station) Outfall
STC-13B	B	Robin Bay	STC-36	B	Long Reef Forereef East
STC-14A	B	Manchenil Bay	STC-37	B	Christiansted Harbor Entrance West
STC-14B	B	Halfpenny Backreef	STC-38	B	Christiansted Harbor Entrance East
STC-15	B	Canegarden Bay (Gut)	STC-39	C	Altoona Lagoon Inlet
STC-15A	B	Canegarden Bay	STC-40	C	St. Croix Marine
STC-16	C	HOVENSA East Turning Basin, NW Corner	STC-41	C	Gallows Bay
STC-17	C	HOVENSA West Turning Basin, NE Corner	STC-42	C	Public Wharf
STC-18	C	Limetree Bay Container Port	STC-43	C	Water Gut Storm Drain
STC-19	C	Krause Lagoon Channel	STC-44	C	Protestant Cay Beach
STC-20	C	Alumina Plant Dock	STC-45	C	Christiansted Harbor
STC-21	B	Spoils Island (Ruth Island)	STC-46	C	V. I Water and Power Intake
STC-22A	B	Treatment Plant (POTW) Outfall	STC-47	B	Mill Harbor Condominiums
STC-23	B	Public Dump	STC-48	B	Long Reef Back Reef West
STC-24B	B	Rum Plant (VI Rum) Outfall	STC-49	B	Long Reef Back Reef East
STC-OFF1	B	NW-1	STC-OFF2	B	SE-1
STC-OFF3	B	SW-1	STC-OFF4	B	North-2
STC-OFF5	B	East-2	STC-OFF6	B	South-2
STC-OFF7	B	West-3	STC-OFF8	B	North-3
STC-OFF9	B	SW-3	STC-OFF10	B	SE-3
STC-OFF11	B	North-4	STC-OFF12	B	SW-4
STC-OFF13	B	SE-4			

St. Thomas 69 Sites

Stations	Class	Location	Stations	Class	Location
STT-1	C	Crown Bay, Near Outfall	STT-22B	B	Vessup Bay
STT-2	C	Crown Bay, Near Tamarind Outlet	STT-23	B	Great Bay
STT-3	C	Subbase	STT-24	B	Cowpet Bay
STT-4	B	Krum Bay	STT-25	B	Nazareth Bay
STT-5A	B	Lindbergh Bay, East	STT-26	B	Benner Bay
STT-5B	B	Lindbergh Bay, West	STT-27A	B	Mangrove Lagoon, Near Treatment Plant
STT-5C	B	WAPA Outfall	STT-27B	B	Mangrove Lagoon, Off Sanitary Landfill
STT-6A	B	Airport Runway	STT-27C	B	Mangrove Lagoon, Near Tropical Marine Fuel Dock
STT-6B	B	Airport College Cove	STT-27D	B	Mangrove Lagoon, Near LaVida Marina
STT-6C	B	S.W. Road, Near Red Point Outfall	STT-27E	B	Mangrove Lagoon, Near Compass Point
STT-7A	B	Brewers Bay	STT-28A	B	Bovoni Bay
STT-7B	B	Perserverance Bay	STT-28B	B	Bolongo Bay
STT-8	B	Fortuna Bay	STT-29A	B	Frenchman’s Bay
STT-9	B	Botany Bay	STT-29B	B	Limetree
STT-10	B	Stumpy Bay	STT-30	B	Morning Star Bay
STT-11	B	Santa Maria Bay	STT-31A	B	Flamboyant Cove
STT-12	B	Caret Bay	STT-31B	B	Hassel Island, off Navy dock
STT-13	B	Dorothea	STT-31C	B	Hassel Island, Careening Cove
STT-14	B	Hull Bay	STT-32A	C	Long Bay, Near South Dolphin
STT-15	B	Magens Bay	STT-32B	C	Long Bay, N.E. Corner
STT-15A	B	Magens Bay, N.E.	STT-33A	C	Long Bay, Off Outfall

STT-15B	B	Magens Bay, NW..	STT-33B	C	Long Bay, Off Outfall
STT-16A	B	Mandahl Bay	STT-35	C	Groden Bay
STT-16B	B	Mandahl Bay Entrance	STT-36	C	STT Harbor, North of Coast Guard Dock
STT-17A	B	Spring Bay	STT-37	C	St. Thomas Harbor, Cay Bay
STT-17B	B	Sunsi Bay	STT-38	C	Haulover Cut
STT-18	B	Coki Point Bay	STT-39	B	Water Isle, East Gregorie Channel
STT-19	B	Water Bay	STT-40	B	Water Isle Hotel, Beach
STT-20	B	Smith Bay	STT-41	B	Water Island Flamingo Bay
STT-21A	B	St. John Bay	STT-42	B	Water Island Sprat Bay
STT-21B	B	Red Bay	STT-OFF6	B	STT-OFF6
STT-22A	B	Red Hook Bay	STT-OFF8	B	STT-OFF8
STT-OFF1	B	STT-OFF1	STT-OFF9	B	STT-OFF9
STT-OFF2	B	STT-OFF2	STT-OFF11	B	STT-OFF11
STT-OFF5	B	STT-OFF5	STT-OFF12	B	STT-OFF12

St. John 27 Sites

Stations	Class	Location	Stations	Class	Location
STJ-43A	B	Cruz Bay, North	STJ-48	B	Fish Bay
STJ-43B	B	Cruz Bay, South	STJ-49	B	Genti Bay
STJ-43C	B	Cruz Bay, North of Seaplane Ramp	STJ-50	B	Little Lameshur Bay
STJ-43D	B	Cruz Bay Creek North	STJ-51	B	Great Lameshur Bay
STJ-44A	B	Trunk Bay	STJ-52	B	Salt Pond Bay
STJ-44B	B	Hawksnest Bay	STJ-53	B	Coral Harbor
STJ-44C	B	Cinnamon Bay	STJ-54	B	Caneel Bay
STJ-44D	B	Francis Bay	STJ-55	B	Turner Bay

STJ-45	B	Great Cruz Bay	STJ-56	B	Johnson Bay
STJ-46	B	Chocolate Hole	STJ-57	B	Round Bay
STJ-47	B	Rendezvous Bay	STJ-58	B	Privateer Bay
STJ-OFF3	B	STJ-OFF3	STJ-OFF10	B	STJ-OFF10
STJ-OFF4	B	STJ-OFF4	STJ-OFF13	B	STJ-OFF13
STJ-OFF7	B	STJ-OFF7			

2. Monitoring Measurements

At each station, field measurements are made of the following:

Turbidity: expressed in Nephelometric Turbidity Units (NTU's) measured 1 meter below the surface and 1 meter above the sea floor (or at the max depth of the instrument (~30 m)) using an EPA approved field instrument.

Dissolved Oxygen: expressed in mg/l saturation and measured 1 meter below the surface and 1 meter above the sea floor (or at the max depth of the instrument (~30 m)) with an EPA approved field instrument.

pH: expressed in Standard Units (SU) measured 1 meter below the surface and 1 meter above the sea floor (or at the max depth of the instrument (~30 m)) with an EPA approved field instrument.

Temperature: expressed in degrees Centigrade measured 1 meter below the surface and 1 meter above the sea floor (or at the max depth of the instrument (~30 m)) with an EPA approved field instrument.

Salinity: expressed in parts per thousand and measured 1 meter below the surface and 1 meter above the sea floor (or at the max depth of the instrument (~30 m)).

Secchi Depth: expressed in meters by a secchi depth recording light transparency.

Bacteria: Water samples are collected by surface grab sample at each station on a quarterly basis and taken to a DPNR certified laboratory where they are analyzed for **Fecal Coliform and Enterococci bacteria.** Results are expressed as number of colonies per 100 milliliters. Analysis is performed utilizing an EPA approved methodology. The geometric mean is also factored in before it is determined that an assessment does not meet the water quality standard.

Total Suspended Solids: Water samples are collected by surface grab sample at each station on an annual basis and taken to a DPNR certified laboratory where they are analyzed utilizing an EPA approved methodology.

Total Phosphorous / Total Nitrogen: Water samples are collected by surface grab samples at each station on an annual basis and taken to a DPNR certified laboratory where they are analyzed utilizing an EPA approved methodology. DPNR-DEP is working to increase the sampling frequency for these parameters. A lack of resources has resulted in limited sampling. Currently, the local lab is being checked for quality assurance issues and the efficiency of the methods used is also being evaluated. Once these issues are assessed, it is anticipated that the monitoring frequency will be increased.

3. 2013, 2014 and 2015 Monitoring Frequency

During this reporting period Ambient Monitoring was conducted for 1 quarter for FY2013, 3 quarters for FY2014 and for 4 quarters for FY2015. DPNR-DEP also conducted BEACH sampling on a weekly basis.

Fiscal Year/Quarter	**Monitoring Dates**
FY13 Qtr 4	STX: September 10 & 29-30, 2013 STT/STJ: September 9-10 & 16-18, 2013
FY14 Qtr 1	STX: December 10-12, 2013

	STT/STJ: December 2 & 11 & 13, 2013
FY14 Qtr. 3	STX: June 10-11 & 24, 2014 STT/STJ: May 6 & 21-23, 2014
FY14 Qtr. 4	STX: September 16-18 & 28, 2014 STT/STJ: September 8 & 10 & 15, 2014
FY15 Qtr 1	STX: December 9 & 12 & 18, 2014 STT/STJ: November 12 & 17 & 19, 2014
FY15 Qtr 2	STX: February 18 & 25-26 & March 19, 2015 STT/STJ: February 17 & 23 & 25, 2015
FY15 Qtr. 3	STX: July 20-21 & 26, 2015 STT/STJ: May 26 & 28 & June 2, 2015
FY15 Qtr. 4	STX: September 22-24, 2015 STT/STJ: August 19 & September 2 & 9, 2015

Samples were collected by EPA's contractor and the results transmitted to DPNR-DEP. One quarter from FY14 was not sampled; therefore data from the last quarter of FY13 was used in assessment.

Figure III.A.1 St. Croix Water Quality Monitoring Network

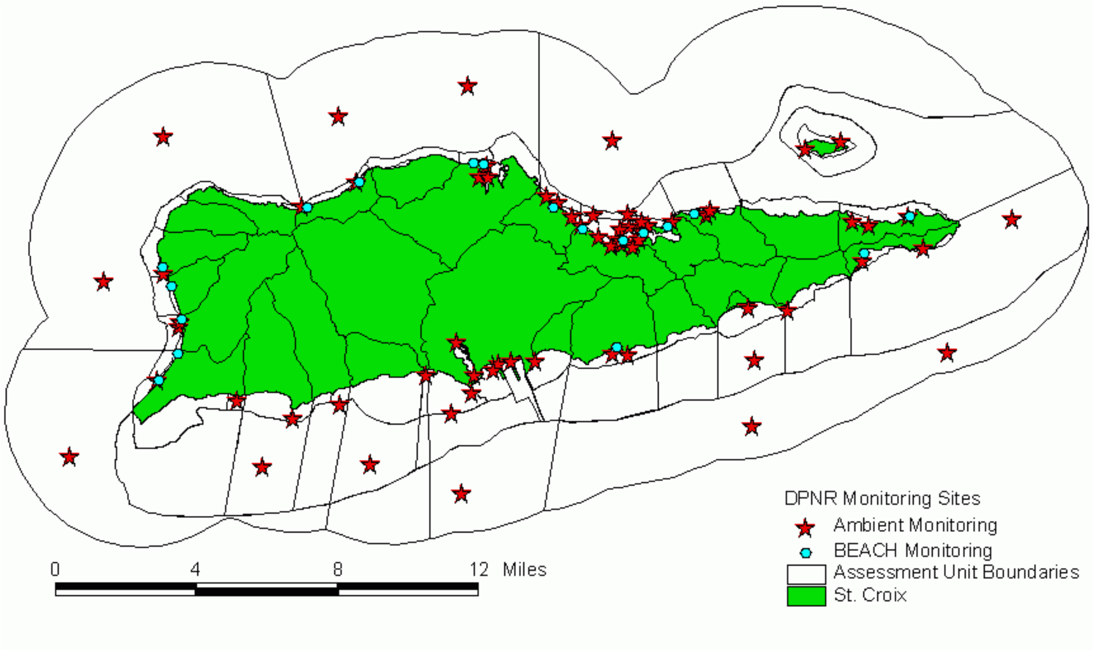
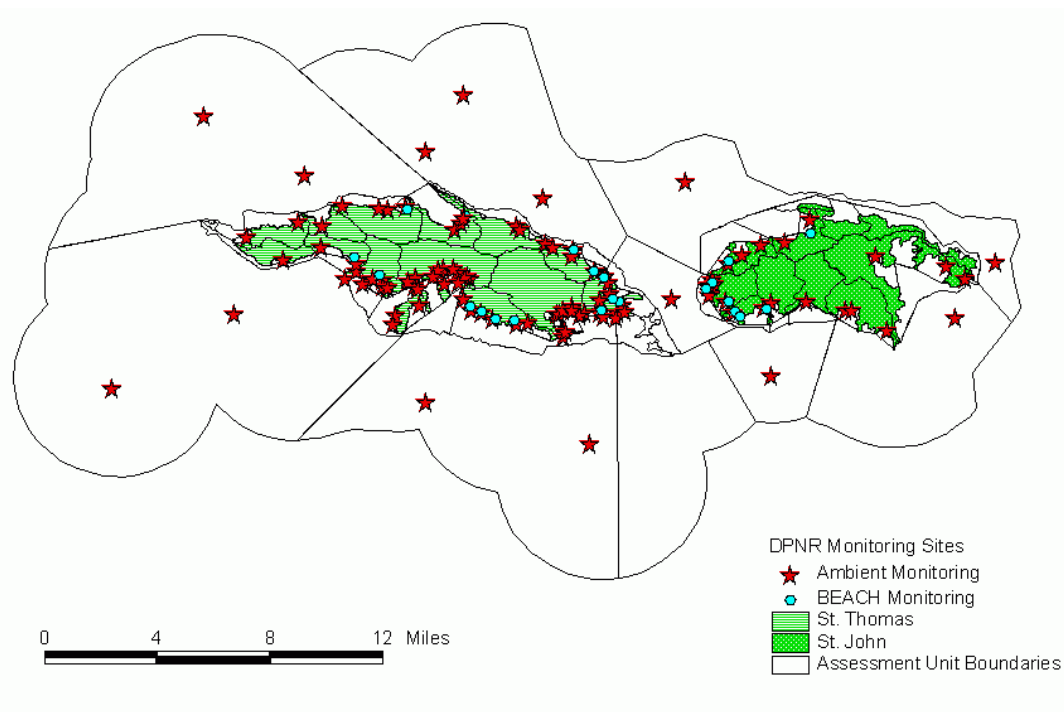


Figure III.A.2 St. Thomas/St. John Water Quality Monitoring Network



4. Toxics/biological monitoring

No monitoring for toxics or biological effects is conducted in the Virgin Islands for lack of baseline standards for Virgin Islands conditions. According to the Virgin Islands multi-year monitoring strategy, DPNR will explore options for implementing a biological component of the Ambient Monitoring Program. This may include developing a partnership with NOAA or another agency with similar monitoring objectives.

5. Fish tissue, sediment, and shellfish monitoring:

The Virgin Islands Water Pollution Control program does not include toxic chemicals or biological monitoring. The program also does not monitor fish tissue, sediment or shellfish for toxicity. A background analysis of ambient water quality has not yet been performed to support the adoption of criteria for toxic chemicals (1996 VI 305(b)).

6. Quality assurance/quality control program

The US Virgin Islands DPNR-DEP's Quality Assurance (QA) Program is committed to assuring and improving the quality of all environmental measurements performed by and for the Department. The goal of the QA program is for the acquisition of reliable and defensible environmental data. It is the policy of DPNR that adequate QA activities are conducted within the agency to ensure that all environmental data generated and processed be scientifically valid, of known precision and accuracy, of acceptable completeness, representative, comparability and where appropriate, legally defensible. During Fiscal Years 2014 and 2015 QA activities such as program technical audits, file audits, revision of the Quality Assurance Management Plan, Management System Reviews, review of program and contractual Quality Assurance Project Plans, review of all program Standard Operating Procedures, and Laboratory Certifications were performed. DPNR has a full-time QA/QC Officer who also acts as the Laboratory Certification Officer for the Department.

7. Volunteer monitoring

DPNR had no monitoring volunteers during the reporting period. Volunteer monitoring, however, is being planned for implementation in future water quality monitoring program activities.

8. Program evaluation

- A background analysis of ambient water quality is needed to support the adoption of specific criteria for toxic pollutants (1998 305(b) Report). As part of the 2015 US Virgin Islands Water Quality Standards revision, the national recommended criteria were adopted;

- New equipment and staff training is needed to assess water quality for the development of toxic and biological criteria (1998 305(b) Report);

- Revisions of the existing Local Water Pollution Control Act and regulation are needed to enhance the program's ability to enforce its laws and statutes;

- Revisions to the Water Quality Standards and criteria to include numeric values instead of narrative description of desired water quality;

- Stormwater regulations have been implemented within the TPDES permitting program.

B. Assessment Methodology

Purpose:

The Clean Water Act requires each state, territory and tribe to conduct water quality surveys to determine if its waters are healthy and have sufficient quality to meet their designated uses and attain water quality standards. The Clean Water Act defines the term "state" to include the U.S. Virgin Islands. A report on this water quality assessment is submitted every two years to US Environmental Protection Agency – Region 2. The report incorporates physical, chemical, and microbiological data from the StoRet database, habitat assessments, and beach monitoring data (fish kills/advisories, oil spills, beach closings, etc.). Use of data is subject to availability.

The U.S. Environmental Protection Agency encourages states, territories and tribes to adopt the Integrated Reporting format which blends elements of the 305(b) Water Quality Assessment Report and the 303(d) Impaired Waterbody List. The United States Virgin Islands Department of Planning and Natural Resources (DPNR-DEP) uses this format to more accurately and completely assess USVI's waterbodies.

Complete assessments include:

Identification of waterbody type.

All waters of the U.S. Virgin Islands shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. The waters within the jurisdiction of the United States Virgin Islands include: all harbors, streams, lakes, ponds, impounding reservoirs, marshes, water-courses, water-ways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the United States Virgin Islands, including the territorial seas, contiguous zones, and oceans. Assessments of these "waters" shall be included in the U.S. Virgin Islands 2016 Integrated Report. All available groundwater data will be reviewed for possible inclusion in the report and the Division of Environmental Protection's Groundwater Program will provide groundwater discussion in the 2016 Integrated Report.

Identification of waterbody classification and designated use.

According to the US Virgin Islands water quality standards, dated June 11, 2010, the waters of the Virgin Islands exist in one of three classes: A, B and C. The following describes the geographical extent of the three waterbody classes, the associated designated uses, and the applicable water quality standards.

Detailed classification of USVI Waters can be found in Part II, Section B above.

Inventory of physical, chemical and microbiological data

The Division of Environmental Protection's Coastal Water Quality (Ambient) Monitoring Program is managed by the Water Quality Management Program (WQMP). Through the Coastal Water Quality Monitoring Program, ambient water quality is monitored on a quarterly basis, WQMP also monitors designated recreational beaches on a weekly basis through the Beach Water Quality Monitoring Program. Through an In-Kind Assistance Agreement, USEPA contractor was responsible for conducting quarterly Ambient Monitoring for FY14-15.

The inventory of physical, chemical and microbiological data used to develop the 2016 Integrated Report and make water quality assessments are StoRet data extracts from fiscal years 2013-2015 from the Ambient Program and fiscal years 2014-2015 for the Beach Water Quality Monitoring Program. The parameters used to perform the assessments are parameters which were analyzed by the Ocean Systems Laboratory, University of the Virgin Islands' Environmental Analysis Laboratory, Pace Analytical Laboratory and USEPA Region II Laboratory. These parameters include: Fecal Coliform, Enterococci, Turbidity and Total Phosphorus. Two additional parameters were analyzed in FY13 but the USVI currently do not have Water Quality Standards by which assessments can be made, those parameters are Total Kjeldahl Nitrogen and Escherichia Coli Bacteria.

The Assessment Database (ADB) is a valuable tool in storing information regarding designated uses for waterbodies. ADB is also useful in storing pollutant and stressor data pertinent to making accurate assessments and ADB also stores cause and source data.

Habitat assessment data inventory

The US Virgin Islands Division of Fish and Wildlife has been identified as a possible data source for habitat assessments. However, there is no habitat assessment data available at this time. If data is available in the future it will be included in future water quality assessment reports.

Visual Data Sources

The Department of Planning and Natural Resources, Division of Environmental Protection keeps a log of all incidents of oil spills, fish kills and other events that had a negative impact on the water quality in the US Virgin Islands. It was determined that there were no visual data sources to be reported on or included for this reporting cycle.

Identify exceedances of water quality standards

The US Virgin Islands water quality standards set limits for various criteria. All readily available data that meet quality assurance/quality control requirements will be compared to the limits set by the USVI water quality standards to determine which waterbodies exceed these limits.

During this reporting cycle the parameters listed below were assessed in the following manner:

Parameter	Source Data Type	Assessment Method
Enteroccoci	Ambient	Shall not exceed single sample max of 104/100ml
	Beach	Shall not exceed geometric mean of 35/100mL on quarterly basis
Fecal Coliform	Ambient	Class A, B: Shall not exceed a geometric mean of 70/100ml
		Class C: Shall not exceed a geometric mean of 200/100ml
Turbidity	Ambient	Class A, B: shall not exceed 3NTU (in-situ reading) and secchi disk reading of minimum of 1 meter; Class C: secchi disk reading of minimum of 1 meter
	Beach	Lab reading averaged on quarterly basis shall not exceed 3 NTU
Total Phosphorus	Ambient	Shall not exceed 50 ug/l
pH	Ambient	Class A, B: Range shall not be outside 7.0 to 8.3 standard units
		Class C: Range shall not be outside 6.7 to 8.5 standard units

Dissolved Oxygen	Ambient	Class A, B: Shall be no less than 5.5 mg/L Class C: Shall be no less than 5.0 mg/L
Temperature	Ambient	Shall not exceed 32 degrees Celsius at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions

Designated Use Attainment

The VI Water Quality Standards identify specific designated uses for the waters of the US Virgin Islands according to their waterbody classifications. Designated uses include:

- maintenance and propagation of desirable species of aquatic life (including threatened, endangered species listed pursuant to section 4 of the federal Endangered Species Act and threatened, endangered and indigenous species listed pursuant Title 12, Chapter 2 of the Virgin Islands Code)
- primary contact recreation (swimming, water skiing, etc.).

The Department uses both numeric and narrative criteria to protect designated uses. Numeric criteria are estimates of constituent concentrations that are protective of the designated uses. Narrative criteria are non-numeric descriptions of conditions to be attained/maintained or avoided.

Parameters for Designated Use Assessments

Designated Use	Minimum Parameters Used For Assessments	Source Data Type
• Maintenance and propagation of desirable species of aquatic life • Primary Contact Recreation	Enteroccoci	Ambient
		Beach
	Fecal Coliform	Ambient
	Turbidity (Laboratory-generated)	Beach
	Total Phosphorus	Ambient

	Dissolved Oxygen	Ambient
	Turbidity (Multi-parameter Sonde)	Ambient
	pH	Ambient
	Temperature	Ambient

Data gaps and error control

It is understood that the US Virgin Islands has a number of data gaps. These gaps are not limited to existing data sets, but it can also refer to the lack of certain types of data; additionally, disclaimer language will be added to ensure that everyone who reviews the document is clear about the data used to make assessments.

The table below lists potential data gaps which DPNR intends to work on developing a data document in collaboration with EPA Region 2 in the near future. Any data gaps that are identified will be included in the multi-year monitoring strategy for resolution.

Future Assessment Methodologies to be Included	**Timeframe for inclusion**
Toxicity and toxicant data	See Section 1.4 & Appendix A of the 2015 USVI MYMS for details
Wetland assessment data	See Section 1.4, 4.3 & Appendix A of the 2015 USVI MYMS for details
Intermittent streams data	See Appendix A of the 2015 USVI MYMS for details
"Natural" levels relative to the DO and temperature standards	See Appendix A of the 2015 USVI MYMS for details
Narrative criteria, as listed in Section 186-1(c) of the VI WQS Regulations	See Appendix A of the 2015 USVI MYMS for details
Radioactivity data	See Appendix A of the 2015 USVI MYMS for details

The US Virgin Islands will make every effort to control errors that may have been reported in data. Data determined to be erroneous or flawed based on the program's data quality objectives established in the Coastal Water Quality Monitoring (Ambient) and Beach Water Quality Monitoring Programs Quality Assurance Project Plans will be discarded. Evaluation of this reporting cycle's has determined that the following parameters be used to perform assessments:

Minimum Parameters Used For Assessments	**Source Data Type**
Enteroccoci	Ambient
	Beach
Fecal Coliform	Ambient
Turbidity (Laboratory-generated)	Beach
Total Phosphorus	Ambient
Dissolved Oxygen	Ambient
Turbidity (Multi-parameter Sonde)	Ambient
pH	Ambient
Temperature	Ambient

Natural Disasters

Hurricane season in the US Virgin Islands lasts from June through November each year. There was no sampling during this reporting cycle related to natural disasters. However, the following storm events occurred:

FY14

No episodic monitoring conducted

FY15

Hurricane Danny:

August 21, 2015 - Conducted Beach/Coastal Assessments

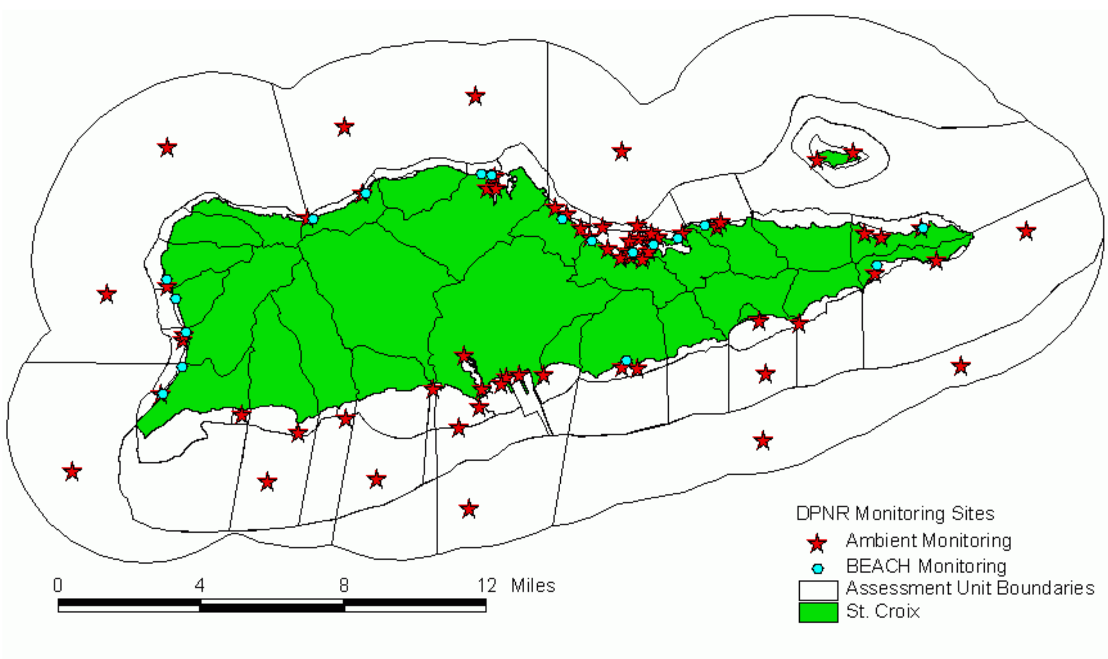
Tropical Storm Erika:

August 25-26, 2015 - Conducted Beach/Coastal Assessments

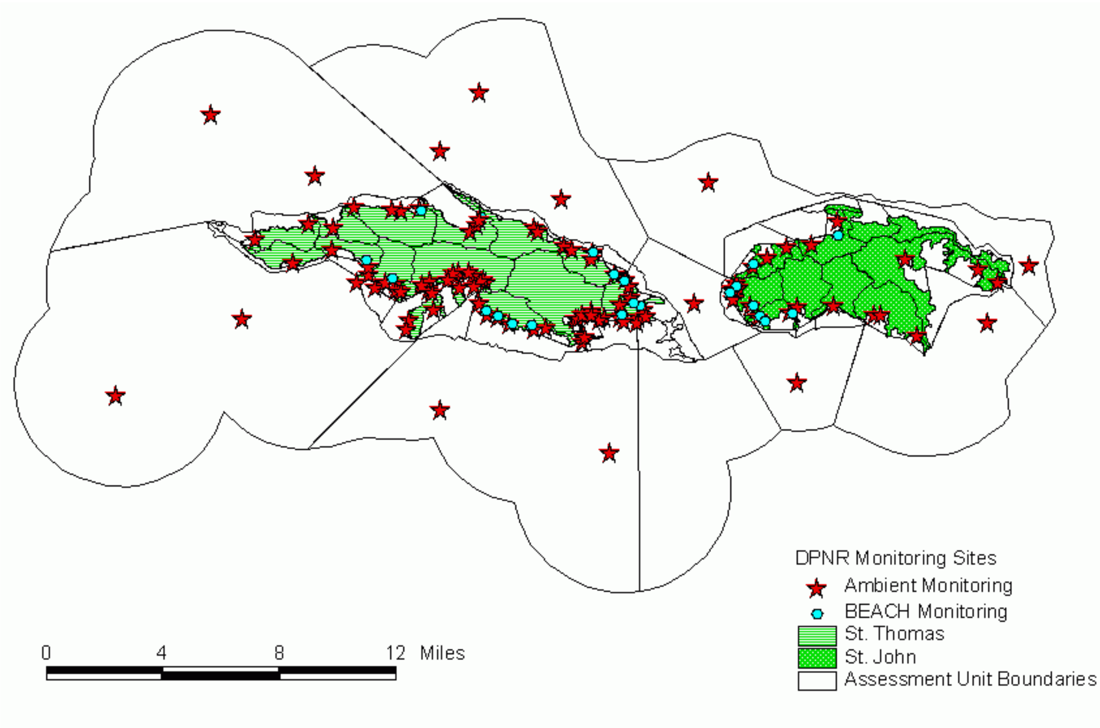
Evaluation of Internal Data

Ambient (Coastal Water Quality) Data was collected throughout the Territory by an EPA-selected contractor for the last quarter of FY2013, 3-quarters during FY2014 and 4-quarters during FY2015. A total of eight quarters is available for the IR. The Beach Water Quality Monitoring Program collected weekly samples at 43 designated beaches throughout the Territory which were analyzed for Enterococci Bacteria and Turbidity (analyzed at the lab). Data received during the 2016 Integrated Report Data Solicitation Process announced on November 2, 2015; and Analytical Data for bacteria grab samples, Total Phosphorus and turbidity (analyzed at the lab), as well as, dissolved oxygen, turbidity, pH and temperature (analyzed by multi-parameter) to make assessments for the 2016 Integrated Report. The data used for assessments were uploaded to the StoRet Database via the Water Quality Exchange. The figures below display DPNR's monitoring locations for its Ambient and Beach Programs:

St. Croix Water Quality Monitoring Network



St. Thomas/St. John Water Quality Monitoring Network



DPNR evaluates all internal monitoring data to determine if the Data Quality Objectives outlined in the USVI Ambient Water Quality Monitoring Program Quality Assurance Project Plan are met i.e. compliance with the Relative Percent Difference (RPD) of 30 or less. Once the data is determined to meet the required objectives, for example the RPD, the data is used to conduct the assessments for the reporting cycle. The elements evaluated are as follows:

Precision

The precision of data are determined by particular actions of the analytical laboratory and field staff, which are outlined in the relative SOPs and QAPPs. WQM staff ensures timely and efficient calibration and maintenance of the multi-parameter sonde, in accordance with DPNR-DEP's YSI 6600 Sonde Operation and Maintenance - SOP. The WQM staff also assures that water samples and related field data are collected at the right locations. Once at the prescribed location staff makes every effort to record field data accurately and entered into the databases for uploading to EPA StoRet, in accordance with the WQX_Web Data Entry SOP. Staff collect field samples in a manner that would limit or prevent sample contamination and deliver samples to laboratory within sufficient time such that the samples can be analyzed within the correct holding time. Staff also fill out required field and lab submittal paperwork, which is also in accordance with the Data Collection and Sample Handling – Ambient Water Quality Monitoring SOP. After data is analyzed and results are received from the laboratory all documents are stored in accordance with Filing of Ambient Field Data Forms and Associated Paperwork SOP.

The precision of data is a measure of the reproducibility of the measurement when an analysis is repeated. The precision of selected chemical analyses will be examined by using standard solutions and comparison of duplicate analysis. Relative percent difference (RPD) will be calculated for field duplicate analysis to assess precision of field collection procedure. Laboratory precision will be determined by calculating RPD of results of "unknown" analysis and laboratory duplicate analysis. The acceptable RPD is 30 or less. The following is the formula used for calculation of RPD:

$$\mathbf{RPD = \{(C1 - C2)/[\ (C1 + C2)/2]\} \times 100}$$

RPD= Relative Percent Difference

C1= Larger of two observed values

C2= Smaller of two observe values

Representativeness

The representativeness of the data is mainly dependent on the sampling locations and the sampling procedures adequately representing the true condition of the sample site. Sampling station siting, and use of only approved/documented analytical methods will determine that the measurement data represent the conditions at the site, to the extent possible. Sampling schedules will be designed with respect to frequency, locations and methodology in order to maximize representativeness, where possible and applicable.

Laboratory representativeness will be achieved by following analytical procedure and standard operating procedures, meeting holding times, and assessment and comparison of field duplicate samples.

Comparability

The comparability of data produced by and for DPNR is predetermined by the commitment of its staff and analytical laboratories to use standardized methods, where possible, including EPA approved analytical methods, or documented modifications thereof which provide equal or better results. These methods have specified units in which the results are to be reported.

Completeness

The completeness of data is a relationship of how much of the data is available for use compared to the total potential data before any conclusion is reached. Ideally, 100% of the data should be available. However, the possibility of data becoming unavailable due to laboratory error, insufficient sample volume, or samples broken in shipping must be expected. Also, unexpected situations may arise where field conditions do not allow for 100% data completeness. Failure to achieve 100% data completeness usually will result from the field crew's inability to sample at stations because of logistical barriers, such as insufficient depth, or adverse weather conditions. In the limited number of instances where these may be encountered, efforts will be made to relocate the station in an adjacent area or re-sample the station. In addition, established protocols for tracking samples during shipment and laboratory processing must be followed to minimize data loss following successful sample collection. The Department has various completeness goals: 100% for data collection and data usage, which directly correlates to a 100% goal for data used to make assessments. However, if less than 8-quarters of data are collected then the Department will not be able to de-list assessment units eligible for delisting.

It is the responsibility of the program manager to verify that the data are representative and completeness is achieved while the analytical data's precision, accuracy, and comparability are mainly the responsibility of the laboratory supervisor.

Data From Other Sources

DPNR will consider data received during its Data Solicitation period for the submission of the draft 303(d) Total Maximum Daily Load List. All data received will be reviewed for credibility and if determined to be of high quality and of great significance it may be added as an appendix. Otherwise, the data received after solicitation process will be considered during the next cycle. Other data sources refer to any data that was collected outside of the US Virgin Islands Department of Planning & Natural Resources.

The following agencies were contacted to request data during the Data Solicitation Period. The agencies were asked to submit all relative monitoring data for the monitoring period with the associated Quality Assurance Project Plan:

Contact Name	Title	Agency	Data Received
Kofi Boateng	Associate State Director	UVI-CES	No data submitted
Darvene Adams	-	USEPA Region 2	No data submitted
David Worthington	-	National Park Service	No data submitted
Barbara S.P. Moore	Director	NOAA/National Undersea Research Program	No data submitted
Eric Hawk	Section 7 Coordinator	National Marine Fisheries Service	No data submitted
Pedro Diaz	-	USGS/GSA Center	No data submitted
Edwin Muniz	Supervisor	USFW/PR Field Office	No data submitted
Tyler Smith, Ph.D.	Assoc. Professor	UVI-CMES	No data submitted outside of Supp106 Project
Paul Jobsis, Ph.D.	Acting Director	UVI-CMES	No data submitted
Nancy Graff & Lisa Terry	-	TNC	No data submitted
Bernard Castillo, Ph.D.	Associate Professor	UVI-CMAS	No data submitted
Kevin Brown	Lab Manager	UVI-CMES	No data submitted outside of Supp106 Project. Project produced nutrient and sedimentation data.
Stevie Webster	-	USVI DOH-EH	No data submitted

Rudy O'Reilly	-	USDA/NRCS	No data submitted
Marlon Hibbert	USVI Management Liason	NOAA's Coral Reef Conservation Program, OCRM	No data submitted

Once received the QAPP and data would be evaluated to determine if DPNR's Data Quality Objectives were met. If the data is determined to be acceptable then the data would be used in the reporting cycle's assessments. A rationale for any decision to not use any existing and readily available data and information would also be included in the Integrated Report. DPNR, however, did not receive data from external sources during the data solicitation period for the FY2014 and 2015 reporting cycle.

DPNR also intends to develop a Standard Operating Procedure for the evaluation of secondary data which will clearly articulate acceptance criteria. That criteria once developed will be incorporated into the relative version of the Assessment Methodology.

Monitored Waters

The coastal waters of the Virgin Islands are evaluated for the following uses: Primary Contact Recreation and Aquatic Life Use Support. All existing and readily available data and information will be assembled and used in the assessment.

Island	# of Assessment Units (AUs)	# of AUs each Class of Water falls under			AUs Monitored (% of Total)
	Total	Class A	Class B	Class C	
St. Croix	84	1	40	6	47 (56%)
St. Thomas	59	0	43	3	46 (78%)
St. John	33	0	21	1	22 (66%)

* AUs not monitored were either missed during monitoring events or currently do not have monitoring locations within them

Use Support Determination

Waterbody delineations used for determining use support are derived from global information system (GIS) coverages. The Division of Environmental Protection is currently considering contracting professional services to develop a standard waterbody delineation based on a number of prevailing factors.

Presently, use support will be determined using the most current version of the US Virgin Islands Water Quality Standards which was promulgated on June 11, 2010. The current use determinations are as follows:

§ 186-2. Class A

(a) **Best usage of waters:** Preservation of natural phenomena requiring special conditions, such as the Natural Barrier Reef at Buck Island, St. Croix and the Under Water Trail at Trunk Bay, St. John. These are outstanding natural resource waters that cannot be altered except towards natural conditions. No new or increased dischargers shall be permitted.

§ 186-3. Class B

(a) **Best usage of waters:** For maintenance and propagation of desirable species of aquatic life (including threatened, endangered species listed pursuant to section 4 of the federal Endangered Species Act and threatened, endangered and indigenous species listed pursuant Title 12, Chapter 2 of the Virgin Islands Code) and for primary contact recreation (swimming, water skiing, etc.). This Class allows minimal changes in structure of the biotic community and minimal changes in ecosystem function. Virtually all native taxa are maintained with some changes in biomass and/or abundance; ecosystem functions are fully maintained within the range of natural variability.

§ 186-4. Class C

(a) **Best usage of waters:** For maintenance and propagation of desirable species of aquatic life (including threatened and endangered species listed pursuant to section 4 of the federal Endangered Species Act and threatened, endangered and indigenous species listed pursuant Title 12, Chapter 2 of the Virgin Islands Code) and for primary contact recreation (swimming, water skiing, etc.). This Class allows for evident changes in structure of the biotic community and minimal changes in ecosystem function. Evident changes in structure due to loss of some rare native taxa; shifts in relative abundance of taxa (community structure) are allowed but sensitive-ubiquitous taxa remain common and abundant; ecosystem functions are fully maintained through redundant attributes of the system.

Ground Water Assessment

Groundwater Monitoring Program

WQM is not tasked with monitoring the groundwaters of the USVI. WQM has been informed by DPNR-DEP's Groundwater Program that the only groundwaters that are monitored throughout the Territory are those that are potable water sources. The monitoring is required through DPNR-DEP's Public Water Systems Supervision Program.

Surface Water Assessment

As part of the assessment process, each assessment is rated as being supporting, partially supporting, not supporting or not applicable (not applicable is usually the result of a data gap). Under the integrated reporting format, partially supporting and not supporting **are both considered impaired and will be listed under category 5 provided water quality standards are exceeded**. The USVI uses partially supporting only as a measure of impairment severity. Severity is important in helping the USVI design a schedule for total maximum daily loads. While partially supporting waters are listed as impaired, not supporting waters are listed as impaired and threatened.

In order to assess an assessment unit, data must be available for at least one applicable parameter associated with the attainment of the given designated use. Impairment of any single indicator will result in the waterbody being listed as impaired (for that parameter), even if the other indicators do not exceed the standards.

Consideration will be taken in cases where a parameter falls within the degree of error of monitoring equipment; the data will be reviewed and if the value is within the instrumentation's degree of error it will be accepted. If after the instrument's degree of error is considered the parameter is still found to be an exceedence it will be considered as such.

1. Primary Contact Recreation

Microbiological Assessment

The use support is based review of quarterly ambient and weekly beach data for single sample maximum allowable density of fecal coliform and enterococci bacteria, beach closing data and reported oil spills. Allowable limits are determined by the class of the water body. Class A requires that in no case shall Class B water quality standards be exceeded. For fecal coliform, Class B waterbodies should not exceed a geometric (log) mean of 70/100ml and 200 colonies/100mL in Class C waters. Likewise, for all classes of waters, a geometric mean of 35 enterococci per 100 ml., or a single sample maximum of 104 per 100 ml of enterococci should not be exceeded at any time The percent of total violations is evaluated as follows:

1. Fully Supporting: None of the Samples exceed a geometric mean of 70 or 200 colonies/100 ml in Class B and C waters for fecal coliform and 104 colonies/100 ml for enterococci.

2. Not supporting: Any of the Samples exceed a geometric mean of 70 or 200 colonies/100 ml in Class B and C waters for fecal coliform and 104 colonies/100 ml for enterococci. These AUs will be listed if the quarterly geometric means are exceeded.

Beach Closing Assessment

In addition to pathogens, beach-closing data will be used to determine primary contact recreation use support. The matrix of allowable violations is as follows:

1. Supporting: No bathing area closures or restrictions in effect during reporting period.

2. Not Supporting: On average, one bathing area closure per year of greater than 1 week's duration, or more than one bathing area closure per year.

* Closure as stated above refers to the VI Department of Health or VI Waste Management Authority closing beaches due to immediate health risks or threats. While, restrictions refer to advisories which may recommend that the public avoid certain areas/beaches.

The Department of Planning and Natural Resources only issues administrative advisories. Beach closures would only be enforced for very serious threats to human health; these closures can only be implemented by the VI Department of Health or the VI Waste Management Authority. These serious threats are usually the related to bypasses or overflows of the municipal sewer system, which may result in raw sewage flowing onto beaches and into the nearshore/bathing areas. DEP has implemented a Beaches Environmental Assessment and Coastal Health (BEACH) Monitoring Program that takes Enterococci at select sites on a weekly basis. This data will be used in conjunction with data collected from the Ambient Monitoring Program.

Beaches which are the listed as not suitable for fishing or swimming in the weekly Beach Program advisories have had samples collected which exceed the standard twice within that monitoring week. The raw data collected by the Beach Program at the program's 43 designated beached are assessed for compliance with standards on a quarterly basis.

Toxicant Assessment (Human Health and Aquatic Life)/ Toxicity Assessment

The applicable numeric water quality standards for toxic pollutants to protect the designated uses of waters of the U.S. Virgin Islands shall be the Environmental Protection Agency's (EPA) national recommended Clean Water Act section 304(a) water quality criteria, EPA's Office of Water, Office of Science and Technology (4304T), 2006. Those parameters can be found at the following website: <nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P1003R9X.TXT>

The conditions for use support are as follows:

1. Fully Supporting: No toxicants or toxicity noted in either acute or chronic tests compared to controls or reference conditions.

2. Partially Supporting: No toxicants or toxicity noted in acute tests, but may be present in chronic tests in either slight amounts and/or infrequently within an annual cycle.

3. Not Supporting: Toxicants or toxicity noted in many tests and occurs frequently.

Currently DPNR-DEP does not collect any toxicity data and none was received during the data solicitation period. Therefore, no assessments were made based on toxicants or toxicity during this reporting period. DPNR-DEP will continue to review its criteria for these assessments and will work to improve upon the current criteria to ensure they are relevant to the assessment of human health. Additionally, as DPNR-DEP works to expand the VI Water Quality Standards this section will continue to be amended.

Other Parameters

Throughout the course of collecting data for this report, data that does not fit within the auspices of the other assessment categories of Primary Contact Recreation Use Support (e.g. aesthetics, pH, turbidity, algae, odor, etc.) will be considered under Other Parameters. The following guidelines apply where appropriate:

1. Fully Supporting: For any one pollutant or stressor, criteria exceeded in none of the measurements.

2. Not Supporting: For any one pollutant, criteria exceeded in any of measurements.

DPNR-DEP intends to continue to work towards in developing expanded criteria for making assessments within this category. There were no assessments made for this category during this reporting cycle.

Habitat Assessment

Determination of Aquatic Life Use Support will consider habitat assessment data (based on availability) in relation to propagation of desired species of marine life and the biological integrity of the benthic communities living within waters. These communities shall be assessed by comparison to reference conditions(s) with similar abiotic and biotic environmental settings that represent the optimal or least disturbed condition for that system. Such reference conditions shall be those observed to support the greatest community diversity, and abundance of aquatic life as is expected to be or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges.

Habitat assessment data is considered as follows:

1. Fully Supporting: Reliable data indicate natural channel morphology, substrate composition, bank/riparian structure, and flow regime of region. Riparian vegetation of natural types and of relatively full standing crop biomass (i.e., minimal grazing or disruptive pressure).

2. Partially Supporting: Modification of habitat slight to moderate usually due to road crossings, limited riparian zones because of encroaching land use patterns, and some watershed erosion. Channel modification slight to moderate.

3. Not Supporting: Moderate to severe habitat alteration by channelization and dredging activities, removal of riparian vegetation, bank failure, heavy watershed erosion or alteration of flow regime and inclusion of exotic or aquatic nuisance species

DPNR-DEP received no habitat assessment data for the 2014-2015 reporting cycle. As DPNR-DEP continues its ongoing efforts to improve the VI Water Quality Standards, criteria will be set for reference conditions/sites which will assist in completing habitat assessments for various waterbody classes.

Conventional Assessment

Conventional parameters are evaluated for violations using the number of exceedences of water quality standards.

The conventional parameters are:

- Dissolved Oxygen (not less than 5.5 mg/l from other than natural conditions)*;
- Temperature (not to exceed 32°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions)*;
- Turbidity(not to exceed 3NTU except in Class C waters, nor less than 1 meter secchi disk reading); and
- pH (not to be out of range of 7.0-8.3 SU for Class A and B, not out of range of 6.7-8.5 for Class C).

*The term "natural condition" for Dissolved Oxygen and Temperature will be addressed through work in collaboration with the Environmental Protection Agency (EPA) for Class B and C waters during the next Triennial Review of the WQS. During that process DPNR-DEP will outline how they will define reference sites and establish reference conditions. Once developed these criteria will be incorporated into this Assessment Methodology.

The conditions for use support for the conventional parameters are as follows:

1. Fully Supporting: For any one pollutant or stressor, criteria exceeded in none of the measurements.

2. Not Supporting: For any one pollutant, criteria exceeded in any of the measurements.

Biological Assessment

When available, DPNR-DEP may use data collected/received from biological monitoring projects. Upon identifying a source of data to apply towards a biological assessment, the conditions for use support, which will be evaluated in accordance with the narrative Biocriteria outlined in the VI Water Quality Standards, as follows:

1. Fully Supporting: Reliable data indicate functioning, sustainable biological assemblages (e.g., fish, macroinvertebrates, or algae) none of which has been modified significantly beyond the natural range of the reference condition.

2. Partially Supporting: At least one assemblage (e.g., fish, macroinvertebrates, or algae) indicates moderate modification of the biological community compared to the reference condition.

3. Not Supporting: At least one assemblage indicates nonsupport. Data clearly indicates severe modification of the biological community compared to the reference condition.

DEP received no biological data for the 2014-2015 reporting cycle, and no biocriteria assessments were undertaken in this assessment cycle. As DPNR-DEP continues its ongoing efforts to improve the VI Water Quality Standards, criteria will be set for reference conditions/sites which will assist in completing biocriteria assessements for various waterbody classes.

DPNR-DEP is working on establishing a baseline for biotic communities in order to be able to better define above noted criteria such as “minimal”, “evident”, “modified significantly”, “moderate modification”, and “severe modification”. These communities shall be assessed by comparison to reference conditions(s) with similar abiotic and biotic environmental settings that represent the optimal or least disturbed condition for that system. Such reference conditions shall be those observed to support the greatest community diversity, and abundance of aquatic life as is expected to be or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected indicator communities of flora and/or fauna and may be used in conjunction with other measures of water quality. Waters shall be of a sufficient quality to support a resident biological community as defined by metrics based upon reference conditions. These narrative biological criteria shall apply to fresh water, wetlands, estuarine, mangrove, seagrass, coral reef and other marine ecosystems based upon their respective reference conditions and metrics.

There is some ongoing Territory-wide biological monitoring of marine communities being done by the University of the Virgin Islands (UVI). Limited coral reef and fish monitoring in specific areas has also been conducted by other local and federal groups (University of the Virgin Islands, National Oceanographic and Atmospheric Administration, and US National Park Service).

Through the University of the Virgin Islands (UVI) in conjunction with the NOAA Coral Reef Conservation Program, NOAA Protected Species, and the USVI Department of Planning and Natural Resources (CZM division), annual to semi-annual assessments of coral health, benthic community structure, fish community structure, and physical dynamics is done at 33 sites down to 65 m (220 ft) depth. These studies are done in an effort to create a data repository for use in future bio-assessment and criteria development. Data reports on these ongoing efforts, called the US Virgin Islands Territorial Coral Reef Monitoring Program (TCRMP), can be found here: https://sites.google.com/site/usvitcrmp/

Additionally, DPNR has conducted two phases of a project in collaboration with the University of the Virgin Islands to correlate water quality and coral health. These projects were funded by Supplemental 106 Funds and were completed between FY10-14. DPNR intends to fund a third phase of this biological study using additional Supplemental 106 Funds.

Listing Rules

Minimum Number of Samples: Unless described differently for a particular parameter, the minimum data set consists of eight (8) samples. These recommendations are intended to ensure that existing water quality conditions are accurately portrayed by the data and that the results do not reflect transitional conditions. The Department will consider a data set which does not meet this minimum requirement on a case-by-case basis to determine if the data adequately characterizes the water quality conditions. Summer-only sampling for nutrients, pathogenic quality, and temperature may be acceptable since summer generally represents the critical condition for these parameters. If the Department determines that the data set adequately represents water quality conditions and there are at least two exceedances of the Surface Water Quality Standards, this limited data set will be used to determine that a use is not attained.

This methodology groups assessments as follows:

Primary Contact Recreation (PCR)	Aquatic Life Use Support (ALUS)

Indicators	Indicators
Microbiological Assessment*	Habitat Assessment
Beach Closing Assessment*	Toxicity Assessment
Conventional Assessment*	Conventional Assessment*
Toxicant Assessment (Human Health)	Toxicant Assessment (Aquatic Life)
Other Parameters	Biological Assessment

*These parameters were used in making the assessments used for listing during this reporting cycle

Category 1

The assessment unit is placed in this category if it meets the water quality standards for the parameters that define support for both Primary Contact Recreation (PCR) & Aquatic Life Use Support (ALUS).

Category 2

The assessment unit is placed in this category if it attains water quality standards for the parameters that define support for either PCR or ALUS but not all uses are supported.

Category 3

The assessment unit is placed it this category if insufficient or no data is available to determine if water quality standards are attained and any designated use is supported. The Virgin Islands considers insufficient data as anything less than eight quarters of monitoring data. However, waters with less than eight quarters of monitoring data may be reviewed on a case-by-case basis if the limited data strongly suggests that water quality standards are exceeded and the designated uses are impaired. Such waters may be eligible for inclusion on the 303(d) List. Remaining waters with insufficient data will be scheduled for more extensive monitoring in the USVI's multi-year monitoring schedule.

Category 3A

No data is available from any of the identified data sources for the assessment unit in question.

Category 3B

Insufficient Data is available from any of the identified data sources for the assessment unit in question. Insufficient data is defined as less than eight quarters of monitoring data. This category differs from Category 2 in that this condition must apply to all designated uses.

Category 3C

Inconclusive Data is available from any of the identified data sources for the assessment unit in question. This might include information from studies that do not directly provide information related to water quality standards.

Category 3D

Unreliable or low quality data is available from any of the identified data sources for the assessment unit in question. Unreliable or low quality data is defined as data sets that have significant gaps, obvious anomalies, etc.

Category 4

Assessment units that are found to be partially or not supporting for one or both designated uses are place in category 4 under the appropriate subcategory (4A, 4B, 4C), but TMDL is not needed.

Category 4A

The assessment unit is placed in this category if it was previously listed on the 303(d) list and a total maximum daily load has been established and approved by EPA.

Category 4B

The assessment unit is placed into this category only if other pollution control requirements are expected to address all water-pollutant combinations and attain all water quality standards within a reasonable period of time. The Virgin Islands considers a reasonable period of time as being the time between reporting cycles. If the impairment is the result of a point source discharge, it is expected that the Territorial Pollution Discharge Elimination System (TPDES) program will take appropriate measures to control point source pollution. If the impairment is the result of non-point source pollution, DPNR will provide evidence that a pollution control measure is in place.

Category 4C

The assessment unit is placed into this category if the impairment was not caused by a pollutant, but instead is caused by pollution. Assessment Units placed in Category 4C do not require the development of a TMDL. Pollution, as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water" (section 502(19)). In some cases, the pollution is caused by the presence of a pollutant and a TMDL is required. In other cases, pollution does not result from a pollutant and a TMDL is not required. These assessment units should be scheduled for monitoring to confirm that there continues to be no pollutant associated with the failure to meet the water quality standard and to support water quality management actions necessary to address the cause(s) of the impairment

Category 5

The assessment unit is placed into this category if water quality standards are exceeded and a total maximum daily load must be established. Assessment units that are placed into Category 5 will be placed on the 2016 303(d) List.

De-listing

As a result of the abovementioned data restrictions, DPNR de-listed some Assessment Units during the 2014-2015 reporting cycle, details of which can be founding the 2016 303(d) List.

Appendix A. Monitoring Frequency for USVI Assessment Units

Assessment Unit ID	Assessment Unit Name & Class	Frequency/ Parameters	Associated Monitoring Stations	Monitoring Frequency for Reporting Cycle
VI-STT-01	Botany Bay Class B	pH, Temperature, Dissolved Oxygen, Depth, Salinity, Secchi, Fecal Coliform/ Enterococci Bacteria, Turbidity monitored Quarterly	STT-9 Botany Bay	**STT-9** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-02	Stumpy Bay Class B		STT-10 Stumpy Bay	**STT-10** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-03	Botany Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-04	Santa Maria Bay		STT-11 Santa Maria Bay	**STT-11**

	Class B			FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-05	Caret Bay Class B		STT-12 Caret Bay	**STT-12** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-06	Neltjeberg Bay Class B		STT-13 Neltjeberg Bay	**STT-13** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15; all parameters monitored
VI-STT-07	Dorothea		STT-13B	**STT-13B**

	Class B		Dorothea	FY14 Not monitored. FY15 Not monitored.
VI-STT-08	Hull Bay Class B		STT-14 Hull Bay, VI616865 Hull Bay	**STT-14** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **VI616865** --Enterococci/Turbidity monitored weekly
VI-STT-09	Dorothea Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-10	Magens Bay Class B		STT-15, STT-15A, STT-15B Magens Bay, VI672756 Magens Bay	**STT-15, 15A and 15B** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored

				FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **VI672756** --Enterococci/Turbidity monitored weekly
VI-STT-11	Northwest St. Thomas HUC14, offshore Class B		STT-OFF1 STT NW-1, STT-OFF9 STT NW-3	**STT-OFF1** FY14 Not monitored FY15 10/01/15: all parameters **STT-OFF9** FY14 Not monitored FY15 10/01/15: all parameters
VI-STT-12	Lovenlund Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-13	Mandahl Bay (Marina) Class B		STT-16B Mandahl Bay Entrance, STT-16C Mandahl	**STT-16B** FY14 12/13/13; 05/23/14 and

			Point Entrance	09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **STT-16C** –Not monitored; Site removed from monitoring network.
VI-STT-14	Tutu Bay		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-15	Sunsi Bay Class B		STT-17B Sunsi Bay	**STT-17B** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-16	Spring Bay		STT-17A	**STT-17A**

	Class B		Spring Bay	FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-17	Mandahl Bay subwatershed , offshore Class B		STT-16A Mandahl Bay, STT-18 Coki Point Bay , VI577932 Coki Point	**STT-16A** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **STT-18** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters

				monitored **VI577932** --Enterococci/Turbidity monitored weekly
VI-STT-18	Water Bay Class B		STT-19 Water Bay, VI591668 Water Bay	**STT-19** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **VI591668** --Enterococci/Turbidity monitored weekly
VI-STT-19	Smith Bay Class B		STT-20 Smith Bay, VI431925 Lindquist Beach	**STT-20** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored

				VI431925 --Enterococci/Turbidity monitored weekly
VI-STT-20	Smith Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-21	St. John Bay Class B		STT-21A St. John Bay, VI327776 Sapphire Beach	**STT-21A** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **VI327776** --Enterococci/Turbidity monitored weekly
VI-STT-22	Red Bay Class B		STT-21B Red Bay	**STT-21B** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored

				FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-23	Vessup Bay Class B		STT-22B Vessup Bay, USGS-50263000 Vessup Bay West	**STT-22B** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored
VI-STT-24	Red Hook Bay Class B		STT-22A Red Hook Bay, USGS-50263500 Vessup Bay East, VI764950 Vessup Bay	**STT-22A** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters monitored FY15 11/17/14; 02/23/15 and 05/28/15: all parameters monitored **VI764950** --Enterococci/Turbidity monitored weekly

VI-STT-25	Great Bay Class B		STT-23 Great Bay, VI505006 Bluebeards Beach	**STT-23** FY14 12/13/13; 05/21/14 and 09/8/14: all parameters monitored FY15 11/12/14; 02/25/15 and 05/26/15: all parameters monitored **VI505006** --Enterococci/Turbidity monitored weekly
VI-STT-26	Red Hook Bay, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-27	St. James Islands, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-28	Cowpet Bay Class B		STT-24 Cowpet Bay, STT-24A Cowpet Bay West	**STT-24** FY14 12/13/13; 05/21/14 and 09/8/14: all parameters monitored

				FY15 11/12/14; 02/25/15 and 05/26/15: all parameters monitored **STT-24A**: Not monitored
VI-STT-29	St. James Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-30A	Northeast St. Thomas HUC14, offshore north Class B		STT-OFF6 STT North-2, STT-OFF12 STT NE-4	**STT-OFF6** FY14 Not monitored FY15 10/01/15: all parameters **STT-OFF12** FY14 Not monitored FY15 10/01/15: all parameters
VI-STT-30B	Northeast St. Thomas HUC14, offshore south		There are currently no monitoring stations within this assessment	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.

	Class B		unit.	
VI-STT-31	Nazareth Bay Class B		STT-25B Secret Harbour, STT-26, STT-26A Benner Bay, VI389422 Secret Harbor	**STT-25B** – Not monitored **STT-26** FY14 12/13/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STT-32	Jersey Bay, offshore Class B		STT-25 Nazareth Bay	**STT-25** FY14 12/13/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STT-33	Benner Bay Class B		USGS-50265900 Benner Bay South	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-34	Benner Bay Lagoon Marina Class B		STT-27D Mangrove Lagoon, Near Lavida Marina, STT-27E Mangrove	**STT-27D and STT-27E** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters

			Lagoon, Near Compass Point, USGS-50265700 Benner Bay North	FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STT-35	Mangrove Lagoon Class B		STT-27A Mangrove Lagoon, Near Treatment Plant, STT-27B Mangrove Lagoon, Off Sanitary Landfill (East of Ecotours), STT-27C Mangrove Lagoon, Near Tropical Marine Fuel Dock, USGS-50278800 Mangrove Lagoon West, USGS-50278500 Mangrove Lagoon East	**STT-27A, STT-27B and STT-27C** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STT-36	Frenchman Bay subwatershed, east Class B		STT-28A Bovoni Bay,STT-28B Bolongo Bay, VI951607 Bolongo Bay	**STT-28A** FY14 12/2/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and

				05/26/15: all parameters **STT-28B** FY14 12/2/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **VI891065** --Enterococci/Turbidity monitored weekly
VI-STT-37	Frenchman Bay Class B		STT-29A Frenchman Bay, VI891065 Frenchman's Bay	**STT-29A** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 05/26/15: all parameters **VI891065** --Enterococci/Turbidity monitored weekly
VI-STT-38	Limetree Bay Class B		STT-29B Limetree Bay, VI776527	**STT-29B** FY14

			Limetree Bay	12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 05/26/15: all parameters **VI776527** --Enterococci/Turbidity monitored weekly
VI-STT-39	Morningstar Bay Class B		STT-30 Morningstar Bay, VI937158 Morningstar Bay	**STT-30** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **VI937158** --Enterococci/Turbidity monitored weekly
VI-STT-40	Pacquereau Bay Class B		STT-31A Flamboyant Cove	**STT-31A** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and

				06/02/15: all parameters
VI-STT-41	Frenchman Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-42	Southeast St. Thomas HUC14, offshore Class B		STT-OFF8 STT South-3, STT-OFF5 STT North2	**STT-OFF8 & STT-OFF5** FY14 Not monitored FY15 10/01/15: all parameters
VI-STT-43	St. Thomas Harbor, inner Class C		STT-31B Hassel Island, Off Navy Dock, STT-31C Hassel Island, Careening Cove, STT-32A Long Bay, Near South Dolphin, STT-32B Long Bay, Northeast Corner, STT-33A Long Bay, Off Outfall, STT-33B Long Bay, Off Outfall, STT-34 Long Bay, Off Pump Station, STT-35 Groden Bay,	**STT-31B** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-31C** FY14 12/2/13; 05/6/14 and 09/10/14; and 08/27/13: all parameters FY15

			STT-36 St. Thomas Harbor, North of Coast Guard Dock, STT-37 St. Thomas Harbor, Cay Bay, STT-38 Haulover Cut	11/19/14; 02/17/15 and 06/02/15: all parameters **STT-32A, 32B, 33A, 33B** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-34 –** Not monitored **STT-35** FY14 12/2/13; 05/6/14 and 09/10/14; and 08/27/13: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-36** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters

				FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-37** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-38** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-44	St. Thomas Harbor, outer Class B		There are currently no monitoring stations within this assessment	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.

			unit.	
VI-STT-45	Gregerie Channel Class B		STT-1 Crown Bay, Near Outfall, STT-39 Water Isle, East Gregorie Channel	**STT-1** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-39** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-46	Sprat Bay Class B		STT-42 Water Island Sprat Bay	**STT-42** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters

VI-STT-47	Hassel Island at Haulover Cut to Regis Point Class C		STT-2 Crown Bay, Near Tamarind Outlet, STT-3 Subbase	**STT-2** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-3** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-48	Water Isle Hotel, Beach Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-49	Druif Bay Class B		STT-40 Water Isle Hotel, Beach	**STT-40** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters

VI-STT-50	Flamingo Class B		STT-41 Water Island Flamingo Bay	**STT-41** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters monitored. FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-51	Krum Bay Class C		STT-4 Krum Bay	**STT-4** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters monitored. FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-52	Lindbergh Bay Class B		STT-5A Lindbergh Bay East, STT-5B Lindbergh Bay West, STT-5C WAPA Outfall, VI514102 Lindberg Bay	**STT-5A** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters monitored. FY15 11/19/14; 02/17/15 and 06/02/15: all parameters

				STT-5B FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **STT-5C** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters monitored. FY15 11/19/14; 02/17/15 and 06/02/15: all parameters **VI514102** --Enterococci/Turbidity monitored weekly
VI-STT-53	Cyril E. King Airport subwatershed, offshore Class B		STT-6C S.W. Road, Near Red Point Outfall	**STT-6C** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters

				FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-54	Perseverance Bay, offshore Class B		STT-6B College Cove	**STT-6B** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters
VI-STT-55	Brewers Bay Class B		STT-7A Brewers Bay, VI293962 Brewer's Bay	**STT-7A** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/17/14; 02/17/15 and 06/02/15: all parameters **VI293962** --Enterococci/Turbidity monitored weekly
VI-STT-56	Perseverance Bay Class B		STT-7B Perseverance Bay	**STT-7B** FY14 12/2/13; 05/6/14 and

				09/10/14: all parameters FY15 11/17/14; 02/23/15 and 05/28/15: all parameters
VI-STT-57	Fortuna Bay Class B		STT-8 Fortuna Bay	**STT-8** FY14 12/13/13; 05/23/14 and 09/15/14: all parameters FY15 11/17/14; 02/23/15 and 05/28/15: all parameters
VI-STT-58	Fortuna Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STT-59	Northwest St. Thomas HUC14, offshore Class B		STT-6A Airport Runway, STT-OFF2 STT NW-1, STT-OFF11 STT SW-4	**STT-6A** FY14 12/2/13; 05/6/14 and 09/10/14: all parameters FY15 11/19/14; 02/17/15 and 06/02/15: all parameters

				STT-OFF 2 and 11 FY14 Not monitored FY15 10/01/15: all parameters
VI-STJ-01	Caneel Bay Class B		STJ-54 Caneel Bay, NPS-1 Caneel Bay, VI658467 Caneel Beach	**STJ-54** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **VI658467** --Enterococci/Turbidity monitored weekly
VI-STJ-02	Hawksnest Bay Class B		STJ-44B Hawksnest Bay, NPS-3 Hawksnest (middle beach), NPS-4 Hawksnest (Gibney Beach), VI255380 Oppenheimer	**STJ-44B** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters

				VI255380 --Enterococci/Turbidity monitored weekly
VI-STJ-03	Trunk Bay Class A		STJ-44A Trunk Bay, NPS-5 Trunk Bay	**STJ-44A** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-04	Hawksnest Bay subwatershed, offshore Class B		NPS-2 Henley Cay	Not monitored
VI-STJ-05	Cinnamon Bay Class B		STJ-44C Cinnamon Bay, NPS-6 Peter Bay, NPS-7 Cinnamon Bay	**STJ-44C** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-06	Maho Bay/Francis Bay		STJ-44D Francis Bay, NPS-8 Maho Bay, NPS-9	**STJ-44D** FY14 12/11/13; 05/21/14 and

	Class B		Francis Bay, VI536165 Big Maho Bay	09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **VI536165** --Enterococci/Turbidity monitored weekly
VI-STJ-07	Maho Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-08	Mary Point Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-09	Leinster Bay Class B		NPS-10 Leinster Bay	Not monitored
VI-STJ-10	Minnebeck Bay Class B		NPS-11 Haulover Bay, NPS-30 Newfoundland Bay, NPS-31 Haulover East	Not monitored
VI-STJ-11	Newfound Bay Class B		There are currently no monitoring stations within	Currently no monitoring stations within this assessment unit and therefore, no monitoring was

			this assessment unit.	conducted.
VI-STJ-12	North St. John HUC14, offshore Class B		STJ-OFF3 STJ NW-1, STJ-OFF10 STJ East-3	**STJ-OFF 3** FY14 Not monitored FY15 09/30/15: all parameters **STJ-OFF 10** FY14 Not monitored FY15 09/30/15: all parameters
VI-STJ-13	Coral Harbor Class B		STJ-53 Coral Bay, NPS-15 Coral Bay Dock, NPS-16 Johnson Bay, VI823989 Johnson's Bay, STJ-56 Johnson Bay	**STJ-53 and 56** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **VI823989** --Enterococci/Turbidity monitored weekly

VI-STJ-14	Hurricane Hole Class B		NPS-13 Water Creek, NPS-14 Princess Bay	Not monitored
VI-STJ-15	Round Bay Class B		STJ-57 Round Bay	**STJ-57** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-16	Coral Bay Class B		NPS-12 Long Point, STJ-58 Privateer Bay	**STJ-58** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-17	Salt Pond Bay Class B		STJ-52 Salt Pond Bay, NPS-17 Salt Pond Bay	**STJ-52** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and

				05/26/15: all parameters
VI-STJ-18	Grootman Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-19	Great Lameshur Bay Class B		STJ-51 Great Lameshur Bay, STJ-50 Little Lameshur Bay, NPS-18 Great Lameshur Bay, NPS-19 Yowsi Point, NPS-20 Little Lameshur Bay	**STJ-50 and 51** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-20	Southeast St. John HUC14, offshore Class B		STJ-OFF7 STJ East-2	**STJ-OFF 7** FY14 Not monitored FY15 09/30/15: all parameters
VI-STJ-21	Genti Bay, nearshore Class B		STJ-49 Genti Bay, NPS-21 Reef Bay	**STJ-49** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and

				05/26/15: all parameters
VI-STJ-22	Genti Bay, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-23	Fish Bay Class B		STJ-48 Fish Bay, NPS-22 Fish Bay	**STJ-48** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-24	Fish Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-25	Rendezvous Bay Class B		STJ-47 Rendezvous Bay, NPS-23 Rendezvous Bay, VI204627 Klain Bay, VI402599 Hart Bay	**STJ-47** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters

				VI204627, VI402599 --Enterococci/Turbidity monitored weekly
VI-STJ-26	Chocolate Hole Class B		STJ-46 Chocolate Hole, NPS-24 Chocolate Hole,VI391298 Chocolate Hole	**STJ-46** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **VI391298** --Enterococci/Turbidity monitored weekly
VI-STJ-27	Rendezvous Bay subwatershed , offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STJ-28	Great Cruz Bay Class B		STJ-45 Great Cruz Bay. NPS-25 Great Cruz Bay, VI779192 Great Cruz Bay	**STJ-45** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters

				VI779192 --Enterococci/Turbidity monitored weekly
VI-STJ-29	Turner Bay/Enighed Pond Class C		STJ-55 Turner Bay, NPS-26 Turner Bay	**STJ-55** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters
VI-STJ-30	Cruz Bay Class B		STJ-43A Cruz Bay, North, STJ-43B Cruz Bay, South, STJ-43C Cruz Bay, North of Seaplane Ramp, STJ-43D Cruz Bay Creek North, NPS-27 Cruz Bay (ferry dock), NPS-28 Cruz Bay (airplane ramp), NPS-29 Cruz Bay (NPS dock), VI309453 Cruz Bay	**STJ-43A,43B, 43D** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15 11/12/14; 02/25/15 and 05/26/15: all parameters **STJ-43C** FY14 12/11/13; 05/21/14 and 09/8/14: all parameters FY15

				11/12/14; 02/25/15 and 05/26/15: all parameters **VI309453** --Enterococci/Turbidity monitored weekly
VI-STJ-31	Great Cruz Bay watershed, offshore Class B		VI456779 Frank Bay	**VI456779** --Enterococci/Turbidity monitored weekly
VI-STJ-32	Southwest St. John HUC14, offshore Class B		STJ-OFF4 STJ SW-1	**STJ-OFF4** FY14 Not monitored FY15 9/30/15: all parameters
VI-STJ-33	Pillsbury Sound Class B		STJ-OFF13 STJ West-4	**STJ-OFF13** FY14 Not monitored FY15 9/30/15: all parameters
VI-STC-01	Frederiksted, south Class B		There are currently no monitoring stations within	Currently no monitoring stations within this assessment unit and therefore, no monitoring was

			this assessment unit.	conducted.
VI-STC-02	Frederiksted Harbor Class C		STC-28 Frederiksted Pier, STC-29 Frederiksted Public Beach, VI970611 F'sted (Fst. Target)	**STC-28 and 29** FY14 12/10/13; 06/10/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters **VI970611** --Enterococci/Turbidity monitored weekly
VI-STC-03	Lagrange subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-04	Prosperity, nearshore Class B		VI252619 Rainbow (Prosperity)	**VI252619** --Enterococci/Turbidity monitored weekly
VI-STC-05	Prosperity subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-06	Sprat Hall Beach		STC-30 Sprat Hall Beach,	**STC-30**

	Class B		VI645288 Sprat Hall	FY14 12/10/13; 06/10/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters **VI645288** --Enterococci/Turbidity monitored weekly
VI-STC-07	Creque Dam/Butler Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-08	Hams Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-09	Davis Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-10	Hams Bluff Class B		There are currently no monitoring stations within this assessment	Currently no monitoring stations within this assessment unit and therefore, no monitoring was

			unit.	conducted.
VI-STC-11	Northwest St. Croix HUC14, offshore Class B		STC-OFF1 NW-1, STC-OFF7 STC West-3	**STC-OFF1** FY14 Not monitored FY15 9/24/15: all parameters **STC-OFF7** FY14 Not monitored FY15 9/24/15: all parameters
VI-STC-12	Cane Bay Class B		STC-32 Cane Bay, VI201013 Cane Bay	**STC-32** FY14 12/12/13; 06/10/14 and 09/16/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters **VI201013** --Enterococci/Turbidity monitored weekly
VI-STC-13	Baron Bluff		STC-31 Davis Bay, VI398766	**STC-31**

	subwatershed Class B		Davis Bay	FY14 12/12/13; 06/10/14 and 09/16/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters **VI398766** --Enterococci/Turbidity monitored weekly
VI-STC-14	Belvedere Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-15	Northside subwatershed Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-16	Salt River Lagoon, Marina Class B		STC-33 Salt River Marina, STC-33C Salt River Lagoon, Marina	**STC-33** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters

				STC-33C – Site no longer monitored
VI-STC-17	Salt River Lagoon, Sugar Bay Class B		STC-33D Salt River Lagoon, Sugar Bay	Not monitored during this cycle
VI-STC-18	Salt River Bay Class B		STC-33A,B,E-J Salt River (Columbus Landing Beach), VI146901 Gentle Winds, VI558328 Columbus Landing	**STC-33A and 33B** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters **STC 33E-J** – No longer monitored **VI146901** --Enterococci/Turbidity monitored weekly **VI558328** --Enterococci/Turbidity monitored weekly
VI-STC-19	Judith Fancy Class B		There are currently no monitoring stations within this assessment	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.

			unit.	
VI-STC-20	Salt River Bay subwatershed, west Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-21	Salt River Bay subwatershed, east Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-22	Northcentral St. Croix HUC14, offshore Class B		STC-OFF4 North-2, STC-OFF11 North-4	**STC-OFF4** FY14 Not monitored FY15 9/24/15: all parameters **STC-OFF11** FY14 Not monitored FY15 9/24/15: all parameters
VI-STC-23	St. Croix-By-the-Sea Class B		STC- 34 St. Croix-By-the-Sea, VI738082 Pelican Cove	**STC-34** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters

				FY15 12/9/14; 02/26/15 and 07/26/15: all parameters **VI38082** **--**Enterococci/Turbidity monitored weekly
VI-STC-24	Long Reef Backreef, west Class C		STC-48 Long Reef Backreef, west	**STC-48** FY14 03/29/13; 05/24/13; 06/26/13 and 09/26/13: all parameters FY15 11/14/13; 09/30/13 and 12/13/13: all parameters
VI-STC-25	Princess subwatershed, offshore Class C		STC-35 Long Reef Forereef West	**STC-35** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters
VI-STC-26	Christiansted Harbor Class C		STC-37 Christiansted Harbor Entrance West, STC-40 St. Croix Marine, STC-41 Gallows Bay,	**STC-37** FY14 12/12/13; 06/24/14 and 09/18/14: all parameters

			STC-42 Public Wharf, STC-43 Water Gut Storm Drain, STC-44 Protestant Cay Beach, STC-45 Christiansted Harbor, STC-46 WAPA Intake, STC-47 Mill Harbor Condominium Beach, STC-49 Long Reef Back Reef East, VI572166 Condo Row (Princess), VI359239 Protestant Cay	FY15 12/12/14; 02/18/15 and 07/21/15: all parameters **STC-40** FY14 12/12/13; 06/24/14 and 09/18/14: all parameters FY15 12/12/14; 02/18/15 and 07/21/15: all parameters **STC-41, 42, 43, 44, 45, 46 and 47** FY14 12/12/13; 06/24/14; 09/18/14 and 09/28/14: all parameters FY15 12/12/14; 02/18/15 and 07/21/15: all parameters **STC-49** FY14 12/12/13; 06/24/14 and 09/28/14: all parameters FY15 12/12/14; 02/25/15 and

				07/26/15: all parameters **VI572166 and VI359239** **--**Enterococci/Turbidity monitored weekly
VI-STC-27	Long Reef Forereef, east Class B		STC-36 Long Reef Forereef East, STC-35A LBJ (Pump Station) Outfall	**STC-36 and 35A** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters FY15 12/9/14; 02/26/15 and 07/26/15: all parameters
VI-STC-28	Altona Lagoon Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-29	Christiansted Harbor, east Class C		STC-1 Lagoon Recreational Beach ,STC-39 Altona Lagoon Inlet, VI213332 New Fort Louise Augusta	**STC-1** FY14 12/11/13; 06/24/14 and 09/18/14: all parameters FY15 12/12/14; 02/18/15 and 07/20/15: all parameters

				STC-39 FY14 12/12/13; 06/24/14 and 09/18/14: all parameters FY15 12/12/14; 02/18/15 and 07/20/15: all parameters **VI213332** **--**Enterococci/Turbidity monitored weekly
VI-STC-30	Beauregard Bay Class B		STC-2 Ft. Louise Augusta Beach, STC-38 Christiansted Harbour Entrance-East, VI651587 Buccaneer	**STC-2** FY14 12/11/13; 06/10/14 and 09/18/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters **STC-38** FY14 12/12/13; 06/10/14 and 09/18/14: all parameters FY15 12/9/14; 02/18/15 and

				07/20/15: all parameters **VI651587** **--**Enterococci/Turbidity monitored weekly
VI-STC-31	Buccaneer Beach Class B		STC-3 Buccaneer Hotel	**STC-3** FY14 12/11/13; 06/10/14 and 09/18/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters
VI-STC-32	Altona Lagoon subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-33	Punnett Bay Class B		VI610321 Shoy's	**VI610321** **--**Enterococci/Turbidity monitored weekly
VI-STC-34	Punnett Point, east Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-35	Tamarind Reef Lagoon (Southgate		STC-4 Tamarind Reef	**STC-4** FY14

	Lagoon) Class B		Lagoon	12/11/13; 06/10/14 and 09/18/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters
VI-STC-36	Green Cay Beach Class B		VI563397 Chenay Bay Beach	**VI563397** **--**Enterococci/Turbidity monitored weekly
VI-STC-37	Southgate subwatershed, offshore Class B		STC-5 Green Cay Beach	**STC-5** FY14 12/11/13; 06/10/14 and 09/18/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters
VI-STC-38	Solitude Backreef Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-39	Teague Bay Class B		STC-8 Reef Club Beach, STC-9 St. Croix Yacht Club Beach, VI381319 Teague Bay (Reef)	**STC-8 and 9** FY14 12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/09/14; 02/25/15 and

				07/20/15: all parameters **VI381319** **--**Enterococci/Turbidity monitored weekly
VI-STC-40	Teague Bay Backreef Class B		STC-10 Cramers Park, VI351774 Cramer's Park	**STC-10** FY14 12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters **VI351774** **--**Enterococci/Turbidity monitored weekly
VI-STC-41	Buck Island Backreef Class A		STC-6 Buck Island Backreef, STC-7 Buck Island Anchorage	**STC-6 and 7** FY14 12/11/13; 06/10/14 and 09/18/14: all parameters FY15 12/09/14; 02/25/15 and 07/20/15: all parameters
VI-STC-42	Buck Island Forereef		There are currently no monitoring	Currently no monitoring stations within this assessment unit and

	Class A		stations within this assessment unit.	therefore, no monitoring was conducted.
VI-STC-43	Solitude and Teague Bay subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-44	Northeast St. Croix HUC14, offshore Class B		STC-OFF8 North-3	**STC-OFF8** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-45	Isaac Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-46	Grapetree Bay Class B		STC-11B Isaacs Bay Forereef	**STC-11B** FY14 12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/18/14; 02/25/15 and 07/26/15: all parameters
VI-STC-47	Turner Hole Backreef		STC-12 Grapetree Beach,	**STC-12** FY14

	Class B		VI297470 Grapetree Beach	12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/18/14; 02/25/15 and 07/26/15: all parameters **VI297470** **--**Enterococci/Turbidity monitored weekly
VI-STC-48	Turner Hole subwatershed, offshore Class B		STC-OFF5 East-2	**STC-OFF5** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-49	Madam Carty Backreef Class B		STC-13B Robin Bay	**STC-13B** FY14 12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/18/14; 02/25/15 and 07/26/15: all parameters
VI-STC-50	Madam Carty, offshore		There are currently no monitoring stations within	Currently no monitoring stations within this assessment unit and therefore, no monitoring was

	Class B		this assessment unit.	conducted.
VI-STC-51	Great Pond Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-52	Great Pond Bay Class B		STC-13A Great Pond Bay	**STC-13A** FY14 12/11/13; 06/24/14 and 09/17/14: all parameters FY15 12/18/14; 02/25/15 and 07/26/15: all parameters
VI-STC-53	Great Pond Bay subwatershed, offshore Class B		STC-OFF13 SE-4	**STC-OFF13** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-54	Leprey Valley Backreef Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-55	Leprey Valley subwatershed		There are currently no monitoring stations within	Currently no monitoring stations within this assessment unit and therefore, no monitoring was

	, offshore Class B		this assessment unit.	conducted.
VI-STC-56	Bugby Hole Backreef Class B		STC-14A Halfpenny Bay - Manchenil, STC-14B Halfpenny Backreef, VI931289, Halfpenny	**STC-14A and STC-14B** FY14 12/11/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 03/19/15 and 07/26/15: all parameters **VI931289** **--**Enterococci/Turbidity monitored weekly
VI-STC-57	Bugby Hole subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-58	Southeast St. Croix HUC14, offshore Class B		STC-OFF2 SE-1, STC-OFF10 SE-3	**STC-OFF2** FY14 Not monitored FY15 9/23/15: all parameters **STC-OFF10** FY14

				Not monitored FY15 9/23/15: all parameters
VI-STC-59	Canegarden Bay Class B		STC-15 Canegarden Bay	**STC-15** FY14 12/11/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 03/19/15 and 07/26/15: all parameters
VI-STC-60	Canegarden Bay, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-61	Hess Oil Virgin Islands Harbor Class C		STC-16 HOVENSA East Turning Basin, NW Corner, STC-17 HOVENSA West Turning Basin, NW Corner	**STC-16** FY14 12/11/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters

				STC-17 FY14 12/10/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-62	Limetree Bay Class B		STC-18 Limetree Bay Container Port	**STC-18** FY14 12/10/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-63	Martin-Marietta Alumina Harbor Class C		STC-19 Krause Lagoon Channel, STC-20 Alumina Plant Dock	**STC-19** FY14 12/10/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters **STC- 20**

				FY14 12/10/13; 06/11/14 and 09/17/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-64	Manning Bay/Estate Anguilla Beach Class B		STC-23 Public Dump	**STC-23** FY14 12/10/13; 06/11/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-65	Hovensa, west Class B		STC-22A Treatment Plant (POTW) Outfall STC-21 Spoils Island (Ruth Island)	**STC-22A** FY14 12/10/13; 06/11/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters **STC-21** FY14

				12/10/13; 06/11/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-66	Hovensa subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-67	Southports St. Croix HUC14, offshore Class B		STC-OFF9 SW-3	**STC-OFF9** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-68	Bethlehem subwatershed, inshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-69	Bethlehem subwatershed, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-70	Airport, nearshore		There are currently no monitoring	Currently no monitoring stations within this assessment unit and

	Class B		stations within this assessment unit.	therefore, no monitoring was conducted.
VI-STC-71	Airport, offshore Class B		STC-OFF6 South-2	**STC-OFF6** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-72	Airport St. Croix HUC14, offshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-73	Diamond, nearshore Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-74	Enfield Green Beach/VIRIL Outfall Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-75	Diamond subwatershed, offshore Class B		STC-24B Rum Plant (VI Rum) Outfall	**STC-24B** FY14 12/10/13; 06/11/14 and 09/16/14: all parameters

				FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-76	Carlton Beach Class B		STC-25 Long Point	**STC-25** FY14 12/10/13; 06/11/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-77	Long Point Bay Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-78	Long Point Bay subwatershed, offshore Class B		STC-OFF12 SW-4	**STC-OFF12** FY14 Not monitored FY15 9/23/15: all parameters
VI-STC-79	Good Hope Beach Class B		STC-26 Good Hope Beach	**STC-26** FY14 12/10/13; 06/11/14 and 09/16/14: all parameters FY15

				12/18/14; 02/26/15 and 07/26/15: all parameters
VI-STC-80	Sandy Point, nearshore south Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-81	Sandy Point, offshore south Class B		There are currently no monitoring stations within this assessment unit.	Currently no monitoring stations within this assessment unit and therefore, no monitoring was conducted.
VI-STC-82	Sandy Point, nearshore west Class B		STC-27 Sandy Point Public Beach, VI896490 Dorsch Bay, VI907985 Stony Ground	**STC-27** FY14 12/10/13; 06/10/14 and 09/16/14: all parameters FY15 12/18/14; 02/26/15 and 07/26/15: all parameters **VI896490** **--**Enterococci/Turbidity monitored weekly **VI907985** **--**Enterococci/Turbidity monitored weekly
VI-STC-83	Sandy Point, offshore west		There are currently no monitoring	Currently no monitoring stations within this assessment unit and

	Class B		stations within this assessment unit.	therefore, no monitoring was conducted.
VI-STC-84	Southwest St. Croix HUC14, offshore Class B		STC-OFF3 SW-1	**STC-OFF3** FY14 Not monitored FY15 9/23/15: all parameters

C. Monitoring Strategy

The Water Quality Management Program revised the Multi-Year Monitoring Strategy in FY2015, the new information will be included in the next Integrated Report. The current monitoring strategy addresses the integrated five categories and the assessment units delineated by Battelle (2003). The monitoring strategy for the next 5-years is included below.

FY 2015

- *Develop indicator thresholds, for classes if necessary, for both nutrient criteria and biocriteria*
- Conduct routine ambient water quality
- TMDL development for high priority waterbodies

  - *including specific data development if necessary*
- Continue to collect monthly DMR and CSI data
- Enter and upload water quality data to WQX_Web/StoRet
- Enter and upload TPDES data to ICIS
- *Develop a methodology for obtaining high spatial and temporal resolution precipitation and meteorological data for the USVI*

- *Develop a methodology for collection of representative gut monitoring data*
- *Develop a supplemental nutrient monitoring protocol for macro-algae and start pilot project*
- *Meet with local data generators to determine best data storage / management systems*
- *Review the type of information collected in each subprogram to develop data models*
- *Establish a formal programmatic evaluation and general support and infrastructure procedure*
- *Report on data analysis and make programmatic recommendations*
- *Adoption of the Recreation Criteria*

FY 2016

- Conduct routine ambient water quality and biocriteria water quality monitoring
- TMDL development for high priority waterbodies

  - *including specific data development if necessary*
- Prepare the Integrated Report
- Continue to collect monthly DMR and CSI data
- *Put nutrient criteria thresholds as draft standards out to public comment*
- Enter and upload water quality data to WQX_Web/StoRet
- Enter and upload TPDES data to ICIS
- Finalize WQS Triennial Review
- *Finalize software / data model for storing all data collected*
- *Establish a formal programmatic evaluation and general support and infrastructure procedure*
- *Perform data analysis to determine relationships between indicators and ancillary data and develop a more appropriate assessment methodology*
- *Reference biennial data analysis to identify technical data needs*
- *Apply for federal diving certification*

FY2017

- Conduct routine ambient water quality (including nutrient)
- Enter and upload water quality data to WQX_Web/StoRet
- Enter and upload TPDES data to ICIS
- TMDL development for high priority waterbodies

  - *including specific data development if necessary*
- Continue to collect monthly DMR and CSI data
- *Begin data entry into agreed upon storage system of both current and archival data*

FY2018

- Conduct routine ambient water quality (including nutrient)
- Enter and upload water quality data to WQX_Web/StoRet
- Enter and upload TPDES data to ICIS
- *Review and if necessary update the MYMS*
- *Review all SOPs and QAPPs, revise if necessary*
- Prepare the Integrated Report
- TMDL development for high priority waterbodies
- Incorporate data into developed for TMDL waterbodies into appropriate modeling software
- Develop monitoring plans for TMDLs undergoing implementation
- Incorporate TMDL effectiveness monitoring into appropriate digital database
- *Finalize biocriteria regulations*
- *Finalize numeric nutrient criteria regulations*

FY2019

- Conduct routine ambient water quality (including nutrient)
- Enter and upload water quality data to WQX_Web/StoRet

- Enter and upload TPDES data to ICIS
- TMDL development for high priority waterbodies

  - including specific data development if necessary
- Continue to collect monthly DMR and CSI data
- *Initiate the 2021 Water Quality Standards Triennial Review*
- *Begin data entry into agreed upon storage system of both current and archival data*

FY2020

- Conduct routine ambient water quality (including nutrient)
- Enter and upload water quality data to WQX_Web/StoRet
- Enter and upload TPDES data to ICIS
- *Review and if necessary update the MYMS*
- *Review all SOPs and QAPPs, revise if necessary*
- Prepare the Integrated Report
- TMDL development for high priority waterbodies
- Incorporate data into developed for TMDL waterbodies into appropriate modeling software
- Develop monitoring plans for TMDLs undergoing implementation
- Incorporate TMDL effectiveness monitoring into appropriate digital database

Section 303(d) Waters

Section 303(d) of the Clean Water Act requires States and Territories to develop a list of impaired waters needing TMDLs every even-numbered calendar year. An impaired waterbody is one for which technology-based pollution controls are not stringent enough to attain or maintain compliance with applicable State and Territory water quality standards. In order for a water quality-limited waterbody to attain water quality standards, a TMDL must be developed and implemented specifically for that waterbody and pollutant(s) of concern. A TMDL is a quantitative assessment of the amount of pollution that a certain waterbody can assimilate while still meeting water quality standards.

On March 15, 2016, the Virgin Islands Department of Planning and Natural Resources released the 2016 303(d) List of Impaired Waterbodies for public comment. The final list consists of 87 assessment units listed for a variety of impairments. The 2016 303(d) List of Impaired Waterbodies is attached to this report as an Attachment.

D. Estuary and Coastal Assessment

1. Designated Use Support Summary

Assessment of the Virgin Islands' coastal waters is presented in (estimated) square miles of assessment unit boundaries. Some 650 square miles are assessed in this report. A summary of use support assessments for coastal waters is shown in Table III.C.1. The mileage presented is based on Global Information Systems (GIS) approximations.

Table III.C.1. Waterbodies, Segments, and Categories

AU ID	AU Name	AU Size (sq. mi.)	Class	305(b) Category	Integrated Category	Impairment
VI-STT-01	Botany Bay	0.1576	B	Not Supporting	5	Turbidity, Enterococci
VI-STT-02	Stumpy Bay	0.0597	B	Not Supporting	5	Turbidity
VI-STT-03	Botany Bay subwatershed, offshore	1.309	B	Insufficient Information	3A	
VI-STT-04	Santa Maria Bay	0.3617	B	Not Supporting	5	Turbidity, Dissolved Oxygen
VI-STT-05	Caret Bay	0.0266	B	Not Supporting	5	Turbidity, Dissolved Oxygen
VI-STT-06	Neltjeberg Bay	0.0562	B	Fully Supporting	1	
VI-STT-07	Dorothea	0.0254	B	Not Supporting	5	Turbidity, Dissolved Oxygen
VI-STT-08	Hull Bay	0.2049	B	Not Supporting	5	Dissolved Oxygen, pH, Turbidity
VI-STT-09	Dorothea Bay subwatershed, offshore	0.7673	B	Insufficient Information	3A	
VI-STT-10	Magens Bay	1.6208	B	Not Supporting	5	Dissolved Oxygen, Enterococci, pH, Turbidity
VI-STT-11	Northwest St. Thomas HUC14, offshore	55.088	B	Fully Supporting	1	
VI-STT-12	Lovenlund Bay	0.0228	B	Insufficient Information	3A	
VI-STT-13	Mandahl Bay (Marina)	0.0131	B	Not Supporting	5	Dissolved Oxygen, Enterococci, Fecal Coliform, pH, Turbidity

VI-STT-14	Tutu Bay	0.0414	B	Insufficient Information	3A	
VI-STT-15	Sunsi Bay	0.0152	B	Not Supporting	5	Dissolved Oxygen
VI-STT-16	Spring Bay	0.0102	B	Not Supporting	5	Dissolved Oxygen
VI-STT-17	Mandahl Bay subwatershed, offshore	1.1379	B	Not Supporting	5	Dissolved Oxygen, Fecal Coliform, Turbidity, Enterococci
VI-STT-18	Water Bay	0.0845	B	Not Supporting	5	Dissolved Oxygen, pH
VI-STT-19	Smith Bay	0.1187	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-20	Smith Bay subwatershed, offshore	0.4103	B	Insufficient Information	3A	
VI-STT-21	St. John Bay	0.0411	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-22	Red Bay	0.0078	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-23	Vessup Bay	0.0619	B	TMDL Established	4A	
VI-STT-23	Vessup Bay	0.0619	B	Not Supporting	5	Enterococci, Temperature, Fecal Coliform, Turbidity
VI-STT-24	Red Hook Bay	0.1772	B	Not Supporting	5	Turbidity
VI-STT-25	Great Bay	0.5593	B	Not Supporting	5	Dissolved Oxygen
VI-STT-26	Red Hook Bay, offshore	0.4725	B	TMDL Established	4A	
VI-STT-28	Cowpet Bay	0.0757	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-29	St. James Bay	1.2439	B	Insufficient Information	3A	
VI-STT-30A	Northeast St. Thomas HUC14,	42.927	B	Fully Supporting	1	

	offshore north					
VI-STT-30B	Northeast St. Thomas HUC14, offshore south	24.908	B	Insufficient Information	3A	
VI-STT-31	Nazareth Bay	0.1793	B	Not Supporting	5	Turbidity
VI-STT-32	Jersey Bay, offshore	1.2925	B	Not Supporting	5	Fecal Coliform
VI-STT-33	Benner Bay	0.4187	B	Insufficient Information	3A	
VI-STT-33	Benner Bay	0.4187	B	TMDL Established	4A	Dissoved Oxygen
VI-STT-34	Benner Bay Lagoon Marina	0.0355	B	Not Supporting	5	Enterococci, Turbidity, Dissolved Oxygen
VI-STT-34	Benner Bay Lagoon Marina	0.0355	B	TMDL Established	4A	
VI-STT-35	Mangrove Lagoon	0.2931	B	Not Supporting	5	Enterococci, Temperature, Turbidity, Fecal Coliform
VI-STT-35	Mangrove Lagoon	0.2931	B	TMDL Established	4A	
VI-STT-36	Frenchman Bay subwatershed, east	0.3532	B	Not Supporting	5	Turbidity, Phosphorus
VI-STT-37	Frenchman Bay	0.0195	B	Not Supporting	5	Dissolved Oxygen, Turbidity, Enterococci
VI-STT-38	Limetree Bay	0.0065	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-38	Limetree Bay	0.0065	B	TMDL Established	4A	
VI-STT-39	Morningstar Bay	0.0215	B	Not Supporting	5	Enterococci, Turbidity
VI-STT-39	Morningstar Bay	0.0215	B	TMDL Established	4A	
VI-STT-40	Pacquereau Bay	0.0453	B	TMDL Established	4A	
VI-STT-41	Frenchman Bay subwatershed, offshore	2.9233	B	TMDL Established	4A	
VI-STT-42	Southeast St. Thomas HUC14,	50.939	B	Fully Supporting	1	

	offshore					
VI-STT-43	St. Thomas Harbor, inner	0.7495	C	Not Supporting	5	Turbidity, Enterococci
VI-STT-43	St. Thomas Harbor, inner	0.7495	C	TMDL Established	4A	
VI-STT-44	St. Thomas Harbor, outer	1.2128	B	TMDL Established	4A	
VI-STT-45	Gregerie Channel	1.7072	B	Not Supporting	5	Turbidity
VI-STT-45	Gregerie Channel	1.7072	B	TMDL Established	4A	
VI-STT-46	Sprat Bay	0.3814	B	Not Supporting	5	Turbidity
VI-STT-46	Sprat Bay	0.3814	B	TMDL Established	4A	
VI-STT-47	Hassel Island at Haulover Cut to Regis Point	0.2074	C	Not Supporting	5	Turbidity
VI-STT-47	Hassel Island at Haulover Cut to Regis Point	0.2074	C	TMDL Established	4A	
VI-STT-48	Water Isle Hotel, Beach	0.0057	B	Insufficient Information	3A	
VI-STT-49	Druif Bay	0.0331	B	Not Supporting	5	Turbidity
VI-STT-49	Druif Bay	0.0331	B	TMDL Established	4A	
VI-STT-50	Flamingo	0.061	B	Not Supporting	5	Turbidity
VI-STT-50	Flamingo	0.061	B	TMDL Established	4A	
VI-STT-51	Krum Bay	0.0754	C	Fully Supporting	1	
VI-STT-51	Krum Bay	0.0754	C	TMDL Established	4A	
VI-STT-52	Lindbergh Bay	0.2612	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-53	Cyril E. King Airport subwatershed, offshore	0.8499	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-54	Perseverance Bay, offshore	0.4734	B	Not Supporting	5	Turbidity
VI-STT-55	Brewers Bay	0.1076	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STT-56	Perseverance Bay	0.2114	B	Fully Supporting	1	
VI-STT-57	Fortuna Bay	0.0827	B	Not Supporting	5	Dissolved Oxygen,

						Enterococci
VI-STT-58	Fortuna Bay subwatershed, offshore	0.6553	B	Insufficient Information	3A	
VI-STT-59	Northwest St. Thomas HUC14, offshore	77.71	B	Fully Supporting	1	
VI-STJ-01	Caneel Bay	0.2623	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STJ-02	Hawksnest Bay	0.2246	B	Not Supporting	5	Dissolved Oxygen
VI-STJ-03	Trunk Bay	0.0685	A	Not Supporting	5	Dissolved Oxygen
VI-STJ-04	Hawksnest Bay subwatershed, offshore	1.7287	B	Unassessed	-	
VI-STJ-05	Cinnamon Bay	0.1456	B	Not Supporting	5	Dissolved Oxygen,
VI-STJ-06	Maho Bay/Francis Bay	0.346	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STJ-07	Maho Bay subwatershed, offshore	1.6071	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STJ-08	Mary Point	0.4831	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STJ-09	Leinster Bay	0.6627	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STJ-10	Minnebeck Bay	1.4876	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STJ-11	Newfound Bay	0.0765	B	Insufficient Information	3A	
VI-STJ-12	North St. John HUC14, offshore	23.719	B	Insufficient Information	3A	
VI-STJ-13	Coral Harbor	0.6965	B	Not Supporting	5	Enterococci, pH, Turbidity, Phosphorus, Dissolved Oxygen
VI-STJ-14	Hurricane Hole	0.7689	B	Insufficient Information	3A	
VI-STJ-15	Round Bay	0.6015	B	Not Supporting	5	Enterococci

VI-STJ-16	Coral Bay	2.2337	B	Insufficient Information	3A	
VI-STJ-17	Salt Pond Bay	0.1978	B	Fully Supporting	1	
VI-STJ-18	Grootman Bay	0.1046	B	Insufficient Information	3A	
VI-STJ-19	Great Lameshur Bay	0.359	B	Not Supporting	5	pH, Turbidity, Phosphorus
VI-STJ-20	Southeast St. John HUC14, offshore	24.319	B	Insufficient Information	3A	
VI-STJ-21	Genti Bay, nearshore	0.0947	B	Not Supporting	5	Turbidity
VI-STJ-22	Genti Bay, offshore	0.769	B	Insufficient Information	3A	
VI-STJ-23	Fish Bay	0.2103	B	Not Supporting	5	Turbidity, Phosphorus, Dissolved Oxygen, pH
VI-STJ-24	Fish Bay subwatershed, offshore	0.1824	B	Unassessed (NPS Jurisdiction)	-	
VI-STJ-25	Rendezvous Bay	0.4677	B	Not Supporting	5	Fecal Coliform, Turbidity
VI-STJ-26	Chocolate Hole	0.1004	B	Not Supporting	5	Dissolved Oxygen
VI-STJ-27	Rendezvous Bay subwatershed, offshore	0.1863	B	Insufficient Information	3A	
VI-STJ-28	Great Cruz Bay	0.1396	B	Not Supporting	5	Dissolved Oxygen, pH, Turbidity
VI-STJ-28	Great Cruz Bay	0.1396	B	TMDL Established	4A	
VI-STJ-29	Turner Bay/Enighed Pond	0.057	B	Fully Supporting	1	
VI-STJ-30	Cruz Bay	0.0674	B	Not Supporting	5	Dissolved Oxygen, Enterococci, Fecal Coliform, pH, Secchi Depth, Turbidity, Phosphorus
VI-STJ-31	Great Cruz Bay watershed, offshore	0.5775	B	Not Supporting	5	Turbidity

VI-STJ-32	Southwest St. John HUC14, offshore	10.142	B	Not Supporting	5	Turbidity
VI-STJ-33	Pillsbury Sound	6.9399	B	Fully Supporting	1	
VI-STC-01	Frederiksted, south	0.0451	B	Insufficient Information	3A	
VI-STC-02	Frederiksted Harbor	0.035	C	Not Supporting	5	Turbidity, Dissolved Oxygen
VI-STC-03	Lagrange subwatershed, offshore	0.375	B	Insufficient Information	3A	
VI-STC-04	Prosperity, nearshore	0.1118	B	Not Supporting	5	Turbidity
VI-STC-05	Prosperity subwatershed, offshore	0.5129	B	Insufficient Information	3A	
VI-STC-06	Sprat Hall Beach	0.0609	B	Not Supporting	5	Enterococci, Turbidity, Phosphorus, Dissolved Oxygen
VI-STC-07	Creque Dam/Butler Bay	0.529	B	Insufficient Information	3A	
VI-STC-08	Hams Bay	0.3144	B	Insufficient Information	3A	
VI-STC-09	Davis Bay	0.0522	B	Insufficient Information	3A	
VI-STC-10	Hams Bluff	0.5506	B	Insufficient Information	3A	
VI-STC-11	Northwest St. Croix HUC14, offshore	33.302	B	Fully Supporting	1	
VI-STC-12	Cane Bay	0.0613	B	Not Supporting	5	Turbidity, Phosphorus
VI-STC-13	Baron Bluff subwatershed	0.3498	B	Not Supporting	5	Dissolved Oxygen, Enterococci, Turbidity
VI-STC-14	Belvedere	0.0557	B	Insufficient Information	3A	
VI-STC-15	Northside subwatershed	0.6109	B	Insufficient Information	3A	
VI-STC-16	Salt River Lagoon, Marina	0.0194	B	Not Supporting	5	Enterococci, Fecal Coliform, Turbidity
VI-STC-16	Salt River Lagoon, Marina	0.0194	B	TMDL Established	4A	
VI-STC-17	Salt River Lagoon, Sugar Bay	0.3244	B	Fully Supporting	1	

VI-STC-17	Salt River Lagoon, Sugar Bay	0.3244	B	TMDL Established	4A	
VI-STC-18	Salt River Bay	0.3229	B	Not Supporting	5	Enterococci, Fecal Coliform, Turbidity, Dissolved Oxygen
VI-STC-18	Salt River Bay	0.3229	B	TMDL Established	4A	
VI-STC-19	Judith Fancy	0.01	B	Insufficient Information	3A	
VI-STC-20	Salt River Bay subwatershed, west	0.2433	B	Insufficient Information	3A	
VI-STC-21	Salt River Bay subwatershed, east	0.8922	B	Insufficient Information	3A	
VI-STC-22	Northcentral St. Croix HUC14, offshore	23.61	B	Fully Supporting	1	
VI-STC-23	St. Croix-By-the-Sea	0.0727	B	Not Supporting	5	pH, Turbidity
VI-STC-24	Long Reef Backreef, west	0.1153	C	Not Supporting	5	Enterococci
VI-STC-25	Princess subwatershed, offshore	0.4343	B	Fully Supporting	1	
VI-STC-25	Princess subwatershed, offshore	0.4343	B	TMDL Established	4A	
VI-STC-26	Christiansted Harbor	0.9601	C	Not Supporting	5	
VI-STC-26	Christiansted Harbor	0.9601	C	TMDL Established	4A	
VI-STC-27	Long Reef Forereef, east	0.3149	B	Not Supporting	5	Fecal Coliform,
VI-STC-27	Long Reef Forereef, east	0.3149	B	TMDL Established	4A	
VI-STC-28	Altona Lagoon	0.2337	B	Insufficient Information	3A	
VI-STC-29	Christiansted Harbor, east	0.1089	C	Not Supporting	5	Dissolved Oxygen, Enterococci, Fecal Coliform, Turbidity, pH
VI-STC-30	Beauregard Bay	0.2145	B	Not Supporting	5	Fecal Coliform, Secchi Depth, Turbidity, pH
VI-STC-31	Buccaneer Beach	0.0166	B	Not Supporting	5	Dissolved Oxygen, Fecal Coliform
VI-STC-32	Altona Lagoon subwatershed,	0.6812	B	Insufficient Information	3A	

	offshore					
VI-STC-33	Punnett Bay	0.0576	B	Not Supporting	5	Turbidity
VI-STC-34	Punnett Point, east	0.0223	B	Insufficient Information	3A	
VI-STC-35	Tamarind Reef Lagoon (Southgate Lagoon)	0.0205	B	Not Supporting	5	Fecal Coliform
VI-STC-36	Green Cay Beach	0.1017	B	Not Supporting	5	Enterococci, Turbidity
VI-STC-37	Southgate subwatershed, offshore	2.2219	B	Not Supporting	5	Dissolved Oxygen
VI-STC-38	Solitude Backreef	0.9681	B	Insufficient Information	3A	
VI-STC-39	Teague Bay	0.1773	B	Not Supporting	5	Dissolved Oxygen
VI-STC-40	Teague Bay Backreef	0.8547	B	Not Supporting	5	Dissolved Oxygen, Fecal Coliform, pH
VI-STC-41	Buck Island Backreef	0.7675	A	Insufficient Information	3A	
VI-STC-42	Buck Island Forereef	3.3497	A	Unassessed (National Park Service Jurisdiction)	-	
VI-STC-43	Solitude and Teague Bay subwatersheds, offshore	18.822	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STC-44	Northeast St. Croix HUC14, offshore.	36.088	B	Unassessed (National Park Service Jurisdiction)	-	
VI-STC-45	Isaac Bay	0.0853	B	Insufficient Information	3A	
VI-STC-46	Grapetree Bay	0.0425	B	Not Supporting	5	Dissolved Oxygen
VI-STC-47	Turner Hole Backreef	0.2772	B	Not Supporting	5	Enterococci, Turbidity, Fecal Coliform
VI-STC-48	Turner Hole subwatershed, offshore	16.949	B	Fully Supporting	1	
VI-STC-49	Madam Carty Backreef	0.464	B	Fully Supporting	1	
VI-STC-50	Madam Carty, offshore	3.5161	B	Insufficient Information	3A	
VI-STC-51	Great Pond	0.1578	B	Insufficient Information	3A	

VI-STC-52	Great Pond Bay	1.0184	B	Not Supporting	5	Fecal Coliform
VI-STC-53	Great Pond Bay subwatershed, offshore	3.0288	B	Fully Supporting	1	
VI-STC-54	Leprey Valley Backreef	0.3712	B	Insufficient Information	3A	
VI-STC-55	Leprey Valley subwatershed, offshore	2.8455	B	Insufficient Information	3A	
VI-STC-56	Bugby Hole Backreef	0.7042	B	Not Supporting	5	Enterococci, Phosphorus
VI-STC-57	Bugby Hole subwatershed, offshore	3.9	B	Insufficient Information	3A	
VI-STC-58	Southeast St. Croix HUC14, offshore	24.146	B	Fully Supporting	1	
VI-STC-59	Canegarden Bay	0.8542	B	Not Supporting	5	Phosphorus, Turbidity, Dissolved Oxygen
VI-STC-60	Canegarden Bay, offshore	0.7933	B	Insufficient Information	3A	
VI-STC-61	Hess Oil Virgin Islands Harbor	0.671	C	Not Supporting	5	Dissolved Oxygen, Enterococci, Phosphorus, Temperature, Turbidity
VI-STC-62	Limetree Bay	0.7239	B	Not Supporting	5	Fecal Coliform, Dissolved Oxygen
VI-STC-63	Martin-Marietta Alumina Harbor	0.3228	C	Not Supporting	5	Dissolved Oxygen
VI-STC-64	Manning Bay/Estate Anguilla Beach	0.0508	B	Not Supporting	5	Dissolved Oxygen, Fecal Coliform, Phosphorus, Turbidity, Dissolved Oxygen
VI-STC-65	HOVENSA, west	1.2865	B	Not Supporting	5	Fecal Coliform, Dissolved Oxygen,

						Enterococci
VI-STC-66	HOVENSA subwatershed, offshore	2.8305	B	Insufficient Information	3A	
VI-STC-67	Southports St. Croix HUC14, offshore	8.1966	B	Fully Supporting	1	
VI-STC-68	Bethlehem subwatershed, inshore	0.2149	B	Insufficient Information	3A	
VI-STC-69	Bethlehem subwatershed, offshore	0.3971	B	Insufficient Information	3A	
VI-STC-70	Airport, nearshore	2.1943	B	Insufficient Information	3A	
VI-STC-71	Airport, offshore	4.263	B	Fully Supporting	1	
VI-STC-72	Airport St. Croix HUC14, offshore	4.1803	B	Insufficient Information	3A	
VI-STC-73	Diamond, nearshore	0.1699	B	Insufficient Information	3A	
VI-STC-74	Enfield Green Beach/VIRIL Outfall	0.1376	B	Insufficient Information	3A	
VI-STC-75	Diamond subwatershed, offshore	2.8479	B	Not Supporting	5	Dissolved Oxygen, Enterococci, Phosphorus, Secchi Depth, Toxicity, Turbidity
VI-STC-76	Carlton Beach	0.2447	B	Not Supporting	5	Dissolved Oxygen, Turbidity
VI-STC-77	Long Point Bay	0.8376	B	Insufficient Information	3A	
VI-STC-78	Long Point Bay subwatershed, offshore	4.9231	B	Fully Supporting	1	
VI-STC-79	Good Hope Beach	0.1876	B	Not Supporting	5	Enterococci, Dissolved Oxygen
VI-STC-80	Sandy Point, nearshore south	2.0121	B	Insufficient Information	3A	
VI-STC-81	Sandy Point, offshore south	7.4306	B	Insufficient Information	3A	
VI-STC-82	Sandy Point, nearshore west	0.1158	B	Not Supporting	5	Dissolved Oxygen, Enterococci,

						Turbidity
VI-STC-83	Sandy Point, offshore west	0.4875	B	Insufficient Information	3A	
VI-STC-84	Southwest St. Croix HUC14, offshore	18.347	B	Fully Supporting	1	

2. Individual Use Support Summary

Assessment of the Virgin Islands' coastal waters is presented in (estimated) square miles of assessment unit boundaries. Some 650 square miles are assessed in this report.

Figure III.C.2.a St. Thomas/St. John Integrated Categories

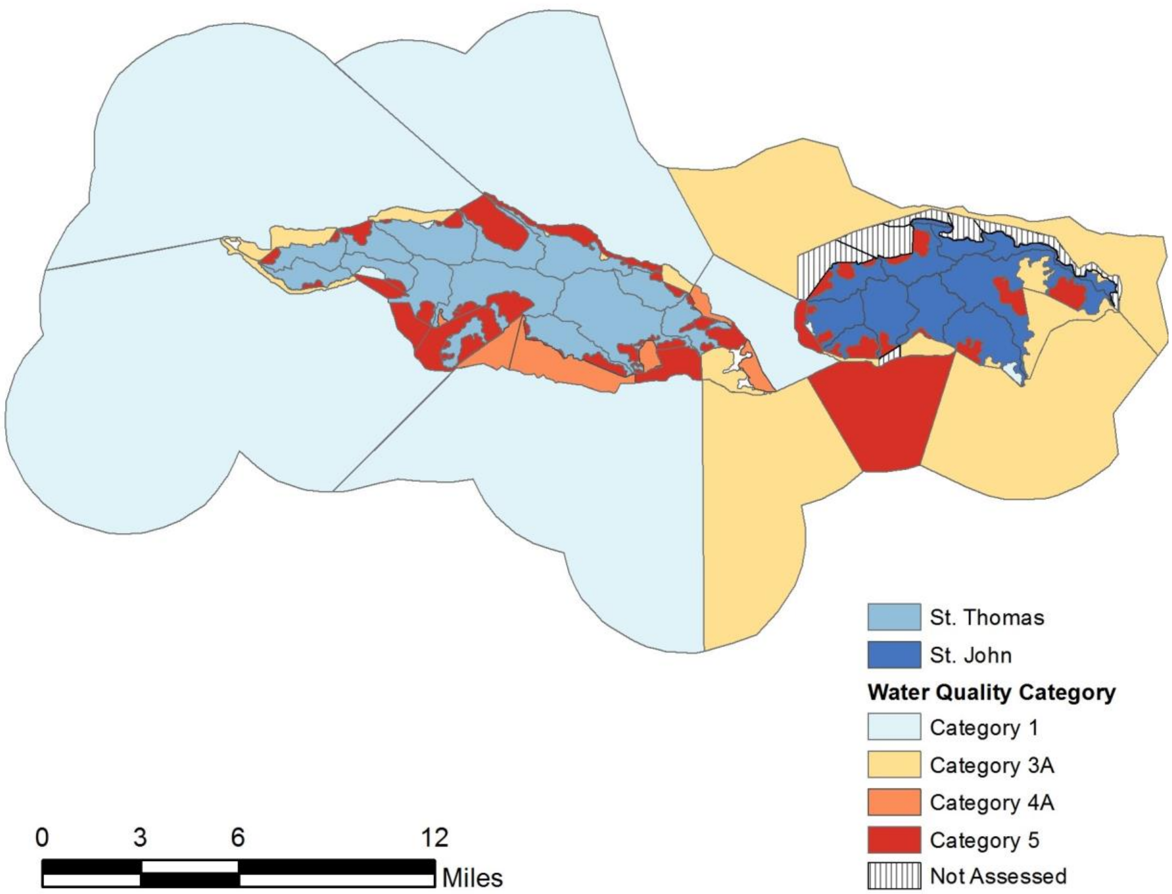
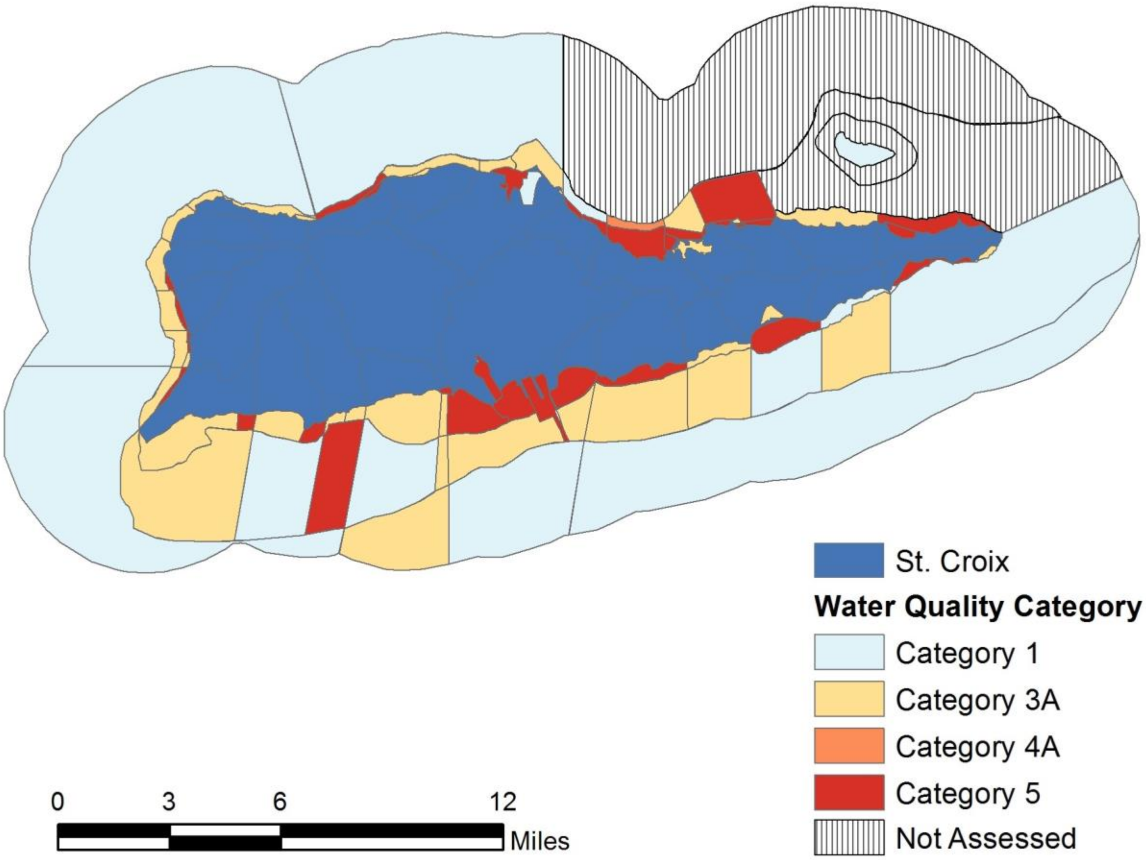


Figure III.C.2.b St. Croix Integrated Categories



Several assessment units were not assessed this cycle because certain areas fall within the jurisdiction of the National Park Service (refer to Attachment 1: 2016 303(d) List of Impaired Waterbodies for greater detail). While the current assessment unit structure does not match perfectly with the waters under federal jurisdiction, Figures III.C.2.c and III.C.2.d illustrates these particular areas, as seen below.

Figure III.C.2.c St. John Assessment Units Completely Under Federal Jurisdiction

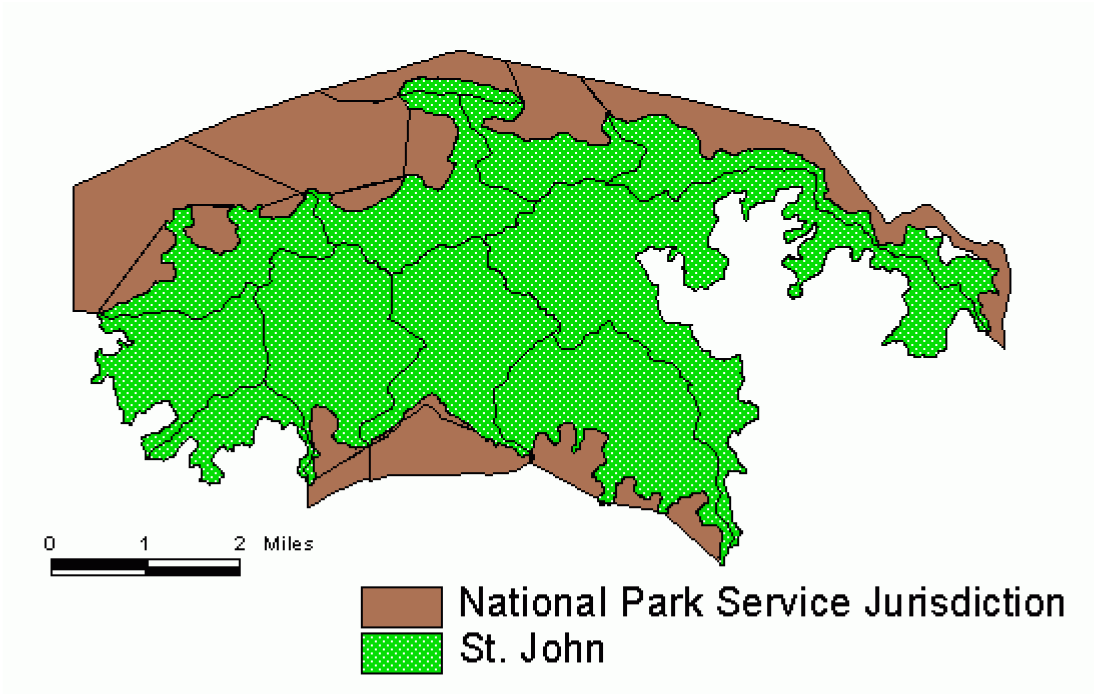
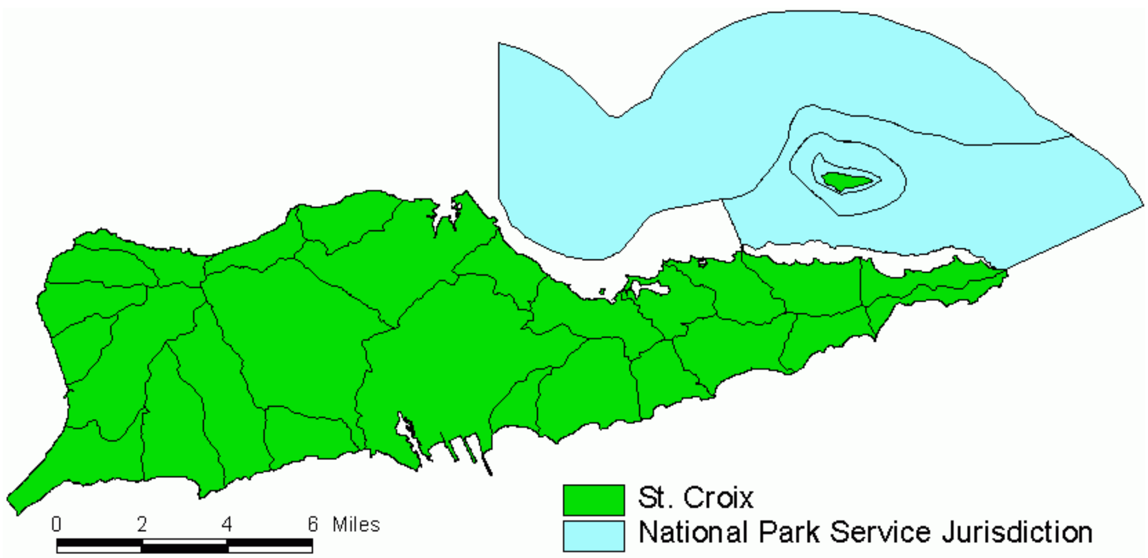


Figure III.C.2.d St. Croix Assessment Units Completely Under Federal Jurisdiction



3. Causes and Sources of Designated Use Impairment

a) Eutrophication

Eutrophication is rarely observed in the Virgin Islands because of tidal flushing and currents driven by the Caribbean current and steady tradewind patterns.

b) Case Studies

The Unified Watershed Assessment includes a detailed summary of existing conditions for the 18 Coastal Zone Management Areas of Particular Concern. These APC reports contain water quality reports for each APC.

E. Wetlands Assessment

1. Introduction

Prior to October 31, 1978, the US Army Corps of Engineers, as delegated by 404 of the Clean Water Act, performed protection of wetlands in the Virgin Islands. After that date, all coastal wetland protection was mandated to the Department of Planning and Natural Resources, Division of Coastal Zone Management. Guidelines are found in 12 V.I.C. §903(b)(8) (2013), which states that the Division's responsibility is *"to conserve ecologically significant resource areas for their contribution to marine productivity and value as wildlife habitats, and preserve the function and integrity of reefs, marine meadows, salt ponds, mangroves and other significant areas".*

2. Classification of Wetlands

Classification of wetlands is based on the US Fish and Wildlife Wetland and Deepwater Habitat System (Cowardin *et a*l., 1979). Wetlands are grouped into four categories: tidal, seep, landlocked ponds, and spring tidal wetlands.

Tidal ponds or lagoons have narrow inlets connecting to the sea and have a salinity level that is slightly higher than seawater.

Seep ponds and **landlocked ponds** are not open to the sea, and have fluctuating water and salinity levels depending on rainfall.

Spring tidal wetlands fringe bays, but standing water only occurs during spring tides, when strong onshore winds push water into the wetlands, or during times of heavy rainfall and consequent flooding.

The primary source of wetland impairment is non-point source pollution, construction intrusions, and sedimentation from upland run-off.

Table III.D.1 Wetlands Classification[12]

[Classification of wetlands is based on the US Fish and Wildlife Wetland and Deepwater Habitat System (Cowardin et al., 1979).]

St. Croix	**Classification**
Great Pond	Estuarine, Intertidal, Forested
Billy French Pond	Estuarine, Intertidal, Forested, Scrub-Shrub, Basin
West End Salt Pond	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub, Basin
Altoona Lagoon	Estuarine, Intertidal, Forested
Coakley Bay	Marine (Coastal), Intertidal, Unconsolidated sanded shore
Long Point Bay	Estuarine, Unconsolidated sanded shore, Intertidal
Mt. Fancy	Estuarine, Intertidal, Scrub- shrub, Unconsolidated shore, cobble-gravel
Robin Bay	Marine (Coastal), Intertidal, Unconsolidated cobble gravel
Southgate Pond	Estuarine, Intertidal, Scrub-shrub basin
Salt River/Sugar Bay	Estuarine, Intertidal, Unconsolidated sanded shore and bottom
Half Penny	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
Krause Lagoon	Estuarine, Intertidal, Scrub-shrub,
Manchenil	Marine (Coastal), Intertidal, Unconsolidated sanded shore

St Thomas	**Classification**
Mandahl Bay	Estuarine, Intertidal, Unconsolidated bottom, Scrub-shrub
Fortuna Bay	Estuarine, Intertidal, Unconsolidated sanded shore, Forested,
Magens Bay	Marine (Coastal), Sub-tidal, Coral Reef,
Perseverance Bay	Estuarine, Intertidal, Forested, Unconsolidated sanded shore
Frenchman's Bay	Estuarine, Intertidal, Unconsolidated sanded shore
Little Conculus Bay	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
Benner Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Mangrove Lagoon	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Smith Bay	Estuarine, Intertidal, Unconsolidated sanded shore
St. John Bay	Estuarine, Intertidal, Unconsolidated sanded shore
Great Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Cabrita Peninsula	Estuarine, Intertidal, Unconsolidated sanded shore
Cowpet Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Vessup Bay	Estuarine, Intertidal, Forested,
Bolongo Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Cabes Point	Estuarine, Intertidal, Scrub-shrub
Little St. James	Estuarine, Intertidal, Unconsolidated Sanded shore, Scrub-shrub
Salt Cay	Estuarine, Intertidal, Unconsolidated Mud,
Patricia Bay	Estuarine, Intertidal, Scrub-shrub
Muller Bay	Estuarine, Intertidal, Unconsolidated Sanded shore, Scrub-shrub
Water Island	**Classification**
Limestone Bay	Marine (Coastal), Intertidal, Unconsolidated Cobble gravel
Sprat Bay	Marine (Coastal), Intertidal, Unconsolidated sanded bottom
Sprat Point	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub

St. John	**Classification**
Brown Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Leinster Bay	Estuarine, Intertidal, Unconsolidated sanded shore
Kiddel Bay	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
Little Lameshur	Estuarine, Intertidal, Scrub-shrub
Great Lameshur	Estuarine, Intertidal, Scrub-shrub
Fish Bay	Estuarine, Intertidal, Unconsolidated sanded shore,
Frank Bay	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
Enighed Bay	Estuarine, Intertidal, Scrub-shrub
Francis Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Salt Pond Bay	Marine (Coastal), Subtidal, Coral Reef, 2, Estuarine, Intertidal, Scrub-shrub
Privateer Bay	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
South side Pond	Estuarine, Intertidal, Unconsolidated sanded shore, Scrub-shrub
Elk Bay	Estuarine, Intertidal, Unconsolidated, sanded shore, Scrub-shrub
Water Creek	Estuarine, Sub-tidal, Unconsolidated bottom
Otter Creek	Estuarine, Sub-tidal, Unconsolidated bottom
Princess Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Coral Bay	Estuarine, Intertidal, Forested, Unconsolidated cobble gravel, Forested
Chocolate Hole	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Peter Bay	Estuarine, Intertidal, Forested,
Turner Point	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Newfound Bay	Estuarine, Intertidal, Unconsolidated Sanded shore,
Reef Bay	Estuarine, Intertidal, Forested,
Calabash Boom	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore
Annaberg	Annaberg Estuarine,
Europa Bay	1. Estuarine, Intertidal, Scrub-shrub 2. Estuarine, Sub-tidal, Unconsolidated sanded bottom
Grooto Pain Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub

Hart Bay	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub
Mary Point	Estuarine, Intertidal, Forested, Unconsolidated Sanded shore, Scrub-shrub

3. Wetlands Protection Activities

There is currently no Wetlands Management Program in the US Virgin Islands, though wetlands form a part of several programs and there are policies and legal mandates for management of wetlands.

There is no clear picture of the current state of wetlands, particularly in terms of the environmental quality, species diversity and ecological integrity. That information gap results primarily from the absence of monitoring programs for wetlands or associated resources. The most extensive information is generated by resource assessments (e.g. survey of water birds or survey of salt ponds) that tend to be island specific and decades apart. Researchers from the University of the Virgin Islands also conduct occasional site-specific assessments.

F. Public Health/Aquatic Life Concerns

Pollution-caused fish kills, *ciguatera* or other abnormalities

The Department of Planning and Natural Resources keeps no log of fish kill incidents within the territory. DPNR will from time to time, however, issue public advisories when such incidents do occur.

Restrictions on swimming areas

□□No sampling related to natural disasters (e.g. hurricanes or storms) was conducted this cycle. There were, however, the following natural disasters during this reporting cycle:

- *Hurricane Danny:*

  August 21, 2015 - Conducted Beach/Coastal Assessments

- *Tropical Storm Erika:*

  August 25-26, 2015 - Conducted Beach/Coastal Assessments

□□ The BEACH program issues notices on a weekly basis for territorial beaches that are being monitored. Advisories are issued following discovery of enterococci impairments.

IV. GROUNDWATER ASSESSMENT

In the VI, ground water is held primarily in three types of aquifers, principally under water table or semi-confined conditions:

1) Carbonate rock system in St. Croix, known as the Kingshill aquifer system
2) Fractured volcanic bedrock
3) Alluvial deposits

The ground water in the Virgin Islands is highly mineralized, often containing total dissolved solids (TDS) in excess of 1000 parts per million (ppm). Sodium, magnesium and calcium are the primary constituents, rendering continued consumption of untreated ground water unhealthy for those on a restricted sodium diet. Additionally, elevated nitrate levels and coliform bacteria have been found in some wells near the main sewer conveyance lines.

The Kingshill aquifer is the largest and most productive aquifer in the USVI. The aquifer has an area of 25 square miles and accounts for 67% of all groundwater withdrawals. Approximately one-third of the population (35,558 (census 2000)) of the entire USVI lives within the aquifer boundary area. Yields from wells can surpass 70,000 gpd/well. Most of the groundwater exists at relatively shallow depths in unconsolidated alluvial sediments or in shallow limestone deposits. The depth to groundwater could range from 5 feet (WAPA Concordia well field) to 60 feet (WAPA Golden Grove well field) below ground surface. Well yields ranged from less than 5 gallons per minute (gpm) (WAPA Adventure well field) to 80 gpm (WAPA Golden Grove well field). Aquifer specific capacity ranged from 1 to 14 gpm per foot draw down with a corresponding aquifer transmissivity ranging from 180 to 3,300 feet squared per day.

There are over 325 wells within the aquifer boundary and it is estimated that the total production of the aquifer is 2.21MGD (WAPA, 1.13 MGD; private wells, 0.55 MGD; industrial/commercial 0.53 MGD). It is estimated that the aquifer can safely supply up to 2.5MGD.

A. Permitting

The Ground Water program manages the installation of groundwater wells and groundwater withdrawals through a permitting system under Virgin Islands Code (VIC) Title 12, Chapter 5, Section 151 *et seq*. New wells can only be sited at locations providing adequate yield and a minimum risk of groundwater contamination from past, existing or future sources and activities.

The Ground Water program also prevents well owners from over pumping, which results in a decrease of the water table in the aquifer, and enforces the use of well head protection to decrease intrusion of contaminants into wells.

All well drillers must be licensed by DPNR/DEP to insure that proper equipment and techniques are used when drilling a well. The well drillers are responsible for the installation of a well. Once the well is drilled, a Groundwater Appropriation Permit stating the total amount of water permitted to be withdrawn on a daily basis is issued to the property owner. For individual homes this is typically 510 gallons per day. Businesses and industries are allotted pumping rates based on their needs and the capacity of the aquifer. Groundwater appropriation permits are issued for a two-year period. When the two-year period is up, the property owner must reapply for a renewal permit.

New wells can only be sited at locations providing adequate yield and a minimum risk of groundwater contamination from past, existing or future sources and activities.

Number of permits issued during this reporting period:

Type of Permits	**Number of Permits**	
	FY 12 **Oct 2011 – Sept 2012**	**FY13** **Oct 2012 – Sept 2013**
Groundwater appropriation permit NEW	24	17
Groundwater appropriation permit RENEWAL	50	28
Volume of Groundwater Appropriated (NEW & RENEWAL)	770,690 gallons per day	536,050 gallons per day
Well Drilling permit	25	22

Soil Boring permit	100	179
Well Drillers license	09	08

DPNR-DEP has identified seven “Key Themes” to guide groundwater management activities over the next decade:

1) Clarifying "Whose Water is it?"

2) Recognizing the Connections between Groundwater and Surface Water

3) Evaluating and Managing Threats to Groundwater Quality

4) Linking Land Use Planning and Groundwater Protection

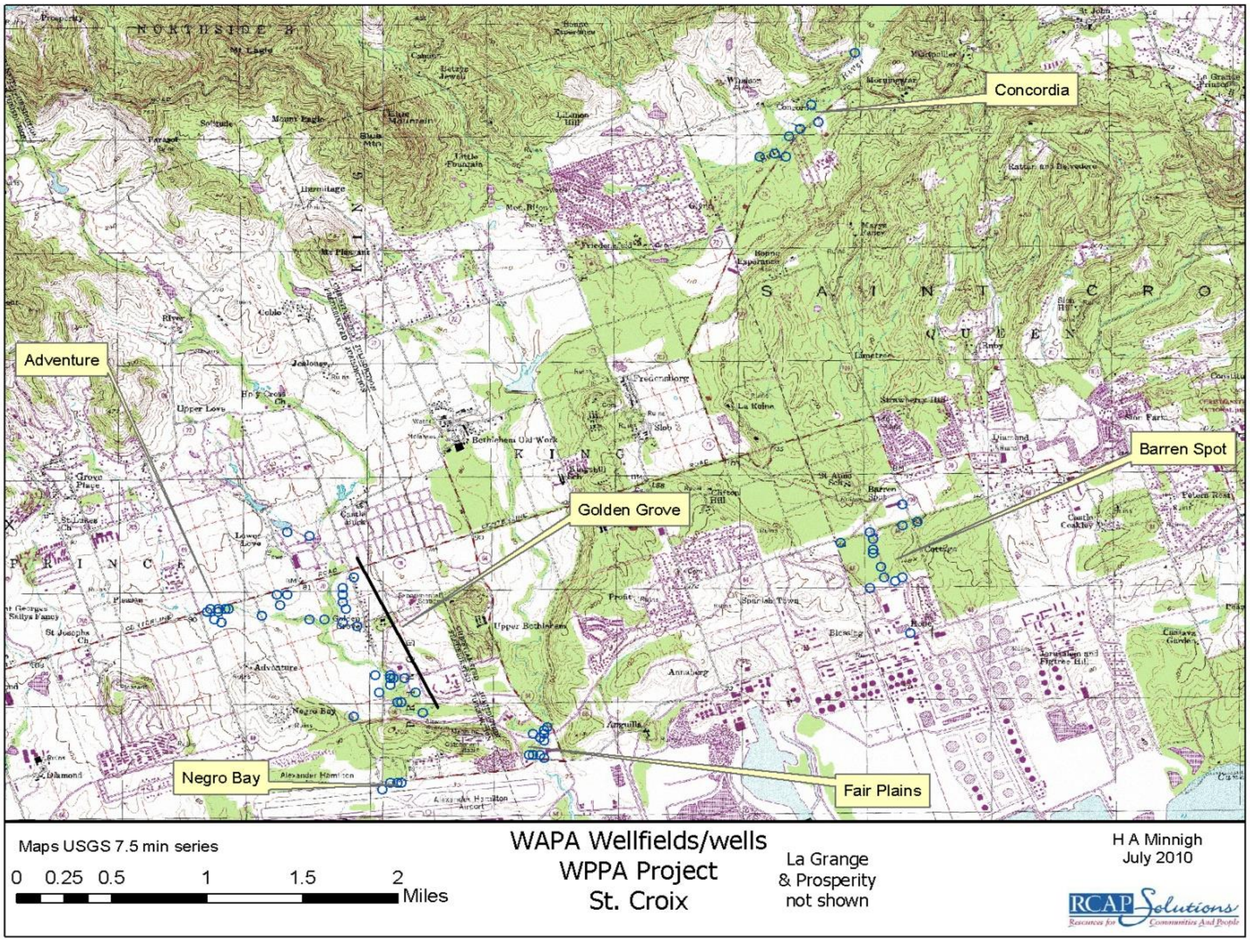
5) Developing a Comprehensive Approach to Groundwater Quantity

6) Addressing Water Use and Conservation Issues

7) Collecting Long-Term Groundwater Data to Address Long-term Problems

1. Virgin Islands Water and Power Authority (WAPA)

The "major" water supplier in the VI is the Virgin Islands Water and Power Authority (WAPA). Ground water has the potential to contribute up to 30% (up to about 1 million gallons per day (MGD)) of the WAPA potable water supply on the island of St. Croix (when the well fields are operating at or near capacity). No ground water is used in the WAPA distribution system on St. Thomas and St. John at the present time; however, the authority has previously investigated the use of ground water in the Sugar Estate, St. Thomas and Estates Adrian and Carolina, St. John, to augment the desalinated water supply.



WAPA : St. Croix

On St. Croix, WAPA's principal water supply comes from desalination units, which are capable of producing about 3 MGD(storage capacity =40 MG). Additionally, WAPA can potentially extract up to 1 MGD of ground water from seven (7) well fields. The principal aquifer in St. Croix is the Kingshill aquifer, predominantly a limestone aquifer that underlies the central portion of the island. The Estates Concordia, Adventure, Fairplains, Negro Bay and Barren Spot well fields tap this aquifer. The western Mahogany Road and La Grange well fields tap an alluvial and fractured bedrock aquifer.

WAPA : St. Thomas

On St. Thomas, WAPA provides desalinated water for distribution (approximately 2.2 MGD (storage capacity =40 MG)). Although WAPA used several wells in the vicinity of the St. Thomas Hospital in Sugar Estate from the late 1960s to the early 1980s, they are no longer used. As part of a recent ground water source exploration program designed for WAPA's Emergency Ground Water Supply (EGWS) Program, the US Geological Survey (USGS) drilled several test wells in various locations on St. Thomas. USGS performed pumping tests on these wells in the Sugar Estate area, but to date, the wells have not been put into production.

WAPA : St. John

On St. John, WAPA's principal potable water source is a 500,000 GPD vapor vacuum compression unit. Additionally, several wells were drilled on St. John under the EGWS program described above, but to date, with the exception of one well in Estate Carolina, the wells have not been put into production. The Estate Carolina WAPA well was put on line in the spring of 1994 as supplemental water supply for the eastern portion of St. John. The well provides mineral-rich water (TDS of approximately 2500 ppm) from a shallow, unconsolidated material aquifer, which is pumped into pressure tanks to meters for non-potable use only.

2. Public Water Systems that utilize groundwater

In addition to WAPA, water-hauling companies utilize wells as a secondary water supply source. Several water-hauling companies treat the ground water by reverse osmosis (RO), and then distribute the water via trucks to individual residences and businesses. Several water-bottling companies also do the same prior to bottling and distribution. These public water systems also include apartment complexes, schools, condominiums, hotels, bars and restaurants. In addition to drinking water quality monitoring parameters, these systems must monitor their well water for Total Dissolved Solids.

Table IV.A.3 Overview of VI Public Water Systems Utilizing Groundwater

Island	**Number of Water Systems Utilizing Groundwater**				
	Community	**Non-Transient, Non-Community**	**Transient, Non-Community**	**Bottled Water Plant**	**Total**
St. Croix	9	4	10	1	**24**
St. Thomas	2	4	13	4	**23**
St. John	0	1	2	1	**4**

Wellhead protection is vital to the long-term quality of life in the VI as the population increases. Fresh water is an especially valuable resource in the VI. The meager but important ground water resources are valuable supplements to the expensive, highly energy-consumptive desalinated water which is so heavily relied upon by much of the population of the VI. Existing untainted ground water resources must be protected. The resources that have already been subjected to contamination by leaking underground storage tanks (USTs), leaking sewer lines and improper storage and disposal of chemicals must be managed to protect adjacent uncontaminated sources and restore damaged resources for future use.

B. Wellhead Protection Actualization Assessment

The Territory does not at this time have a formal Wellhead Protection Plan (WHPP). There is a Wellhead Protection Final Report which was intended to form the nexus for a WHPP. It is anticipated that a WHPP be developed following the US EPA example ordinance[4]. The categories of permitted and non-permitted activities around wellheads[5] contained in the model ordinance will be used. See Table , below for examples of the most common problems in St. Croix.

Table IV.B.1 Non-Permitted uses in Zone 1	
Automobile body/repair shop	1
Gas station	2
Fleet/trucking/bus terminal	3
Dry cleaner	4
Electrical/electronic manufacturing facility	5
Machine shop	6
Metal plating/finishing/fabricating facility	7
Chemical processing/storage facility	8

[4] The model is available at http://www.epa.gov/nps/ordinance/mol7.htm#groundwater.

[5] Actually, in Zone 1, which for St. Croix is the 20-yr TOT radius.

Table IV.B.1 Non-Permitted uses in Zone 1	
Wood preserving/treating facility	9
Junk/scrap/salvage yard	10
Mines/gravel pit	11
Irrigated nursery/greenhouse stock	12
Confined animal feeding operations	13
Land divisions resulting in high density (>1 unit/acre) septic systems	14
Equipment maintenance/fueling areas	15
Injection wells/dry wells/sumps, except for single-family residences directing gutter downspouts to a drywell	16
Underground storage tanks, (except those with spill, overfill, and corrosion protection requirements in place)	17
All other facilities involving the collection, handling, manufacture, use, storage, transfer or disposal of any solid or liquid material or waste having potentially harmful impact on groundwater quality including illegal disposal of solid waste on the surface not directly associated with a facility	18
All uses not permitted in the underlying zone district	19

In Table IV.B.1, note that the sequential numbers are not intended as rankings; these numbers will be used to reference the specific threats in the database under development.

1. *Time of Travel Buffers*

It is abundantly clear that essentially none of the existing priority wells, vendors, WAPA or large user, will meet any of the Time-of-Travel (TOT) suggested, either of the Model Ordinance, which uses 1,000 feet radius (as typical of a 6-month TOT) or in the calculations which are both more rigorous and locally calculated but give 20-yr TOT's radii of approximately 1,400 feet or less with most around 1,000 feet. Examples of these buffers are provided at Figure IV.C. and Figure IV.C.. On the La Grange TOT illustration (Figure IV.C.) the primary threats are the number of residences, all with on-site wastewater treatment as well as solid waste, industrial waste and stored or abandoned equipment. For Negro Bay wells (Figure IV.C.) the primary threats are solid waste (informal dumps) and possible spills from the National Guard facility and the several warehousing facilities to the North. Negro Bay and New Golden Grove are probably the best-sited well fields on St. Croix from the standpoint of nearby risks; i.e., risks within the TOT wellhead protection area.

2. Flooding

All of the WAPA and vendor production wells and many of the large users' wells are located in flood hazard areas (see Figure IV.C.). Most WAPA wells are protected from inundation by reinforced concrete (RC) platforms and risers; an example is at Figure IV.C.10. These are typical of the wells inherited by WAPA from DPW and those developed by the Authority since. A much rarer WAPA well is at Figure IV.C.11 where the casing is continued to about 3' above a platform but without the RC riser. This may be typical of wells developed by private owners and leased to WAPA.

A number of vendors and smaller users near WAPA production wells are notably susceptible to flooding or entry of contaminants through inadequate siting or poorly sealed or unsealed well heads. Illustrations of these are at Figure IV.C.12 through Figure IV.C.10.

3. Particular threats – poor siting or construction

There are a number of egregiously poor sites with wells; poor either because of sites selected and developed or because of poor or mismanagement of the wellhead area or areas adjacent. Since much of this development occurred before there was concerted effort to control development and manage wellhead impact areas there is little that can be done at this point. Some ideas are discussed below in the section - Suggestions for Interim Measures. Often, in the case of adjacent problems, the well owner or operator has little or no control over the use of that area. An example of poor siting is at Figure IV.C.16; this is a shallow well with a compromised seal and subject to overland flows that could include significant amounts of diesel and material from the road.

An example of poor site management (and a very poor well seal) is at Figure IV.C.20 and Figure IV.C.21. While the fuel tank might not exceed the minimum to require containment, it is directly adjacent to a well. In addition, the wellhead is very poorly sealed.

Another example is at Figure IV.C.22 and Figure IV.C.23. Figure IV.C.23 is the cut-off well pipe and conduit for what was a production well at this site. This well is within 10 feet of a well in production for a water vendor and is, as may be seen, completely unprotected.

4. Summary

The most common threat to wells and well recharge areas are the ubiquitous aggregations of household, construction and mechanical solid waste. However, it is apparent that the efforts of the Waste Management Authority have borne fruit; much of this material no longer occurs with the density nor is it as common as it was previously. Exceptions are piles of waste on private property (see Figure IV.C.24 and Figure IV.C.25).

It is important to note that few of these threats to groundwater are the result of intentional misconduct or malfeasance. More typically, they are the result of a lack of understanding of the possible consequences of action or inaction. DPNR will schedule some community consciousness-raising meetings, utilizing some school time for students, for example. In addition, reminding landowners and agencies of responsible land management and the fragility of the groundwater resource in the Territory might also pay dividends.

5. Suggestions for Interim Measures

The following suggestions assume that more staff time and effort will be available for implementing the permit program. While many wells had permits most have expired and many do not meet minimum requirements for permitting. For example, it is believed that most residential wells do not have meters and many commercial wells also do not have meters – or functioning meters – and reporting and permit renovation is not done. In addition, there are a number of large production wells that are not and have never been permitted.

a. Educate Licensed well drillers

DPNR-DEP issues well drillers licenses. DPNR-DEP will use the opportunity to focus educational efforts on the single entity (well drillers) that would touch every new well. If permitted well drillers were responsible for acquiring permits for wells a body of knowledgeable persons would be dealing with DPNR-DEP in the siting and development of new wells.

b. Individual existing wells

At least some effort should be made to assist owners and operators of production wells to reduce threats in the areas of their wellheads. The adoption of a wellhead protection plan should help resolve this, but in the interim assistance in the form of consumer education and assistance with enforcement of Territorial regulations on unpermitted solid waste sites, illegal dumping and storage and handling of liquids, toxic and hazardous materials could provide some relief for owners of wells subject to surface and sub-surface threats.

c. Relief for owners of permitted wells

The Territory should begin to ensure that all permits are current and that permit holders understand their responsibilities in ensuring the viability of groundwater resources in USVI. As part of this effort DPNR-DEP could provide assistance with cataloguing specific threats to permitted wells and provide permittees with an understanding of the possible effects of those threats to their water quality and a record of the then-current state at the time of renovation. In addition, DPNR-DEP could provide permittees with measures they can undertake to eliminate, reduce or manage those risks. As an incentive to renovating permits DPNR-DEP could provide well owner/permittees a specific time period to deal with threats under their control with no penalties.

C. WAPA wells

WAPA wells to remain in service

The WAPA wells that are to remain in service are shown at Table, below. WAPA has not used any groundwater since about April of 2010 since the RO unit at Richmond came on-line. The wells to be retained will be secured and stand-by power will be provided. As part of the work in this project the possibility of distributing normal power from a central location, probably the Fairplains Pump Station, will be considered and reported. This will ease the provision of stand-by power since a single large generator located at or near the central location could be provided and power distributed using the same network used for normal power. Individual costs are not provided at this time, though approximate costs will be part of the final report following consultations with WAPA on the form and generality of security and service-assurance techniques. All these wells use the Fair Plains pump station.

Table IV.C.1 Primary WAPA Wells				
Well#[6]	Well Name	GPM	SWL[7]	Depth
9	Bethlehem	40	38.1	114.2
10	Bethlehem	40	27.6	121.3
5A	Negro Bay	10	52.7	110.5
5	Negro Bay	25	59.3	114.9
6	Negro Bay	20	65.3	130.1
7	Negro Bay	35	58.6	115.1
6	New Golden Grove	35	59.3	114.9
7	New Golden Grove	35	63.3	130.1
8	New Golden Grove	37	52.7	110.5
15A	New Golden Grove	40	62.1	122.5

Output of these wells, as reported by WAPA in 2010, sums to about 0.5 MGD (24-hr day, or 0.25/12 hr day). It remains to be seen if these will improve with reduced WAPA usage. DPNR-DEP has recommended placing well-level meters in at least one well in Negro Bay and one in New Golden Grove. Historical data for static water levels[3] in St. Croix are shown at Figure IV.C. and Figure IV.C.. As may be seen Negro Bay and New Golden Grove show the best levels.

Half a million gallons per day would approximate around 20-25% of normal production. In the event that these wells would become the sole source in the event of a weather or geologic event interrupting

[6] These numbers will be standardized; at least two methods are currently in use.

[7] Standing Water Level.

normal service WAPA and St. Croix could probably maintain minimal service for several weeks. The risk of such an event and the value of additional emergency production must be considered.

WAPA Wells not now scheduled for service beyond 2010

These are shown in Table IV.C.2. These are mostly wells that were developed and owned by others and WAPA has or will let leaseholds lapse. Owners will be advised that these wells must either be permitted and comply with construction and protection norms or abandoned and closed properly. WAPA-owned wells will be subject to the same requirements.

Table IV.C.2 WAPA Wells not intended for service after 2010

Well#	Well Name	GPM	SWL	Depth
18	Adventure	7	25.6	88.2
19	Adventure	10	35.6	100.2
20	Adventure	14	33.6	97.6
5	Adventure	25	31.5	103.3
6	Adventure	13	39.3	99.2
8	Adventure	13	25.7	85.9
1	Fairplain	10	27.1	86.7
1	Old Golden Grove	10	29	91.3
15	Old Golden Grove	12	33.5	94.5
16	Old Golden Grove	13	35.7	86.7
21	Old Golden Grove	14	28.7	91.4

In addition to the wells and well fields above, the following well fields (see Table IV.C.3, below) have been in production or were developed at one time and will be visited and checked for WHPP compliance. Those that have reverted to private hands will be noted and DPNR will schedule dates for closing or rehabilitation, sanitary seal acceptability and security. A priority schedule will be developed.

Table IV.C.3 WAPA Well Fields not intended for service after 2010

Field Name	Number of Wells/
Prosperity	Name used for La Grange and Mahogany Road wells at one time
Mahogany Road	4 All require proper closure or improved protection and seals if owner wants to continue use.
La Grange	2 Operated by Crystal Springs at this point.
Old Golden Grove	4
Barren Spot	9
Adventure	9 All are acceptable; will need improved security if owner desires to use these.
Concordia	5

Wells selected by the amount of water pumped.

The amount of pumpage is generally uncertain and our cut-off is 6,000 gallons per day (gpd, ~2MG per year). The first priority for these wells will be to verify the production numbers.

It is known that a number of these wells belong in the high-risk category, in addition. For example, several of these wells are known to be located in parking lots though they are not precisely located. In general, these have the same threats as do the WAPA wells, with the added problem that they can be very near unsewered population centers.

Wells prioritized by risk.

Risk is used as an analog for the population served or affected by this source and is estimated by:

a. Type of purveyor
    i. Water Source (vendors, standpipe)
    ii. Bottled Water vendor or source
    iii. Condominiums
    iv. Apts
    v. Hotels
b. Population served
    i. Total for Condos, Apts and Hotels
    ii. NT for others

There are a total of approximately 60 wells in addition to the WAPA wells, or about 140 wells in all. These are listed in Table IV.C.5.

Figure IV.C.10. WAPA well with typical platform and riser.

Figure IV.C.11. Untypical WAPA well.

Figure IV.C.12. Cover of well in parking lot.

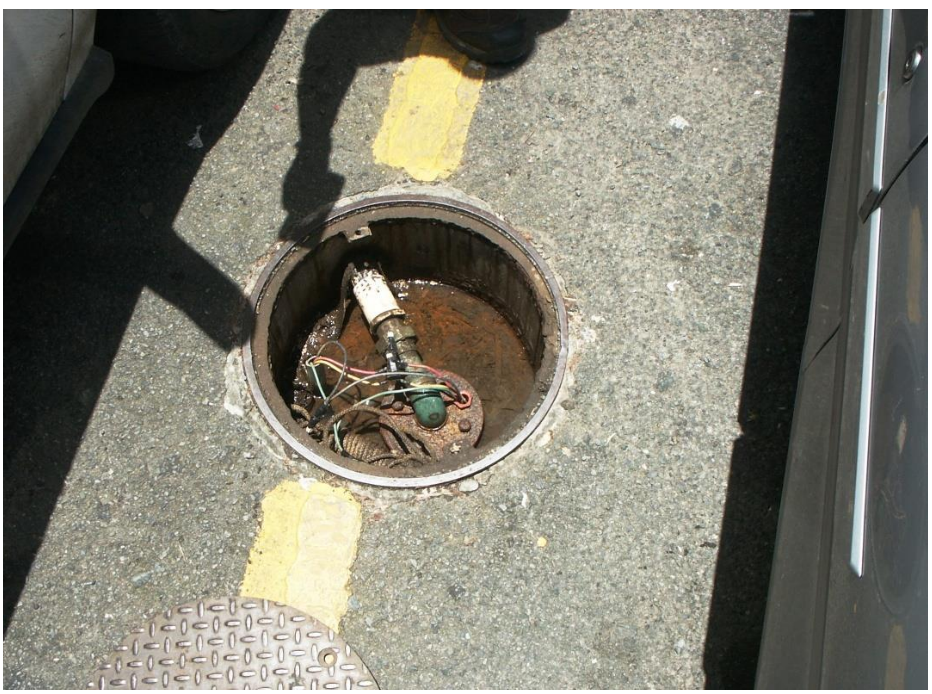


Figure IV.C.13. Wellhead in sump condition with open sanitary seal (rope and flexible conduit for pump).

Figure IV.C.14. Well with possible surface sources of contamination; note ditch from cistern/wastewater overflow and dumpster.

Figure IV.C.15. Wellhead with compromised sanitary seal and cut in casing.

Figure IV.C.16. Francis Water Delivery well site. Google Earth.

Figure IV.C.17. Francis Water Site; 1 is well house, 2 is oil tank and ditch.

Figure IV.C.18. View from North, near well house. Note slope towards well.

Figure IV.C.19. Well head and pump, shallow Francis Water Delivery well.

Figure IV.C.20. Laundromat well without effective seal.

Figure IV.C.21. Diesel tank without containment adjacent to well.

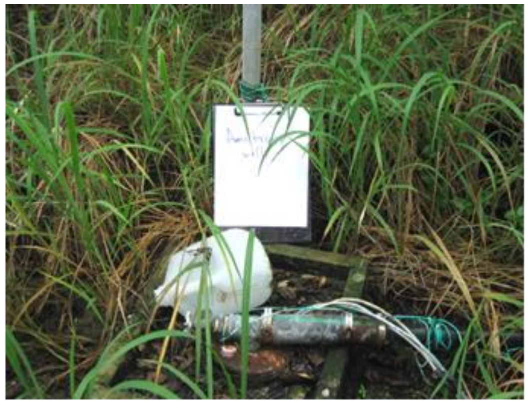
Figure IV.C.22. Production well for vendor; note the galvanized cover.

Figure IV.C.23. What's under the cover; this abandoned well is adjacent to a production well providing potable water.

Figure IV.C.24. Trash near Bethlehem Ghut and wells.

Figure IV.C.25. Abandoned Caustic tank near Bethlehem Ghut and wells.

Figure IV.C 26 Improvement of the GWP during FY-11



The initial inspection well has no meter, no wellhead protection and no sanitary condition around the well.

The follow-up compliance inspection the mater and wellhead protection were in place, and the surrounding areas of the well were clean.

The initial inspection well has no meter and the seal of the well was open.

The follow-up compliance inspection a meter was place and the well seal in correct way.

The initial inspection well has no meter.

The follow-up compliance inspection a meter was place.

The initial inspection show inactive wells that not were seal and abandon properly.

The follow-up compliance inspection all the wells were seal and abandon properly.

Areas that Need to Be Monitor for Improvement

A monotoring complaince inspection that verify the proper contruction of the well.

The enforcement of the proper abandonment of the inactive wells.

The enforcement of the proper capping and sealing of the wells to prevent wasteful use of the water

The enforcement of the wellhead protection to prevent the contamination of the groundwater.

Table IV.C.4. Wells Selected By Daily Appropriation

Property Owner	Pump Rate (GPD)
HOVENSA LLC	599999
THE BUCCANEER HOTEL	520000
FIRST AMERICAN DEVELOPMENT GROUP	315000
CARAMBOLA BEACH RESORT & SPA	200000
VIRGIN ISLANDS RUM INDUSTRIES LTD	142000
SEVEN SEAS WATER CORP.	120000
GRAPE TREE SHORES, INC. (Divi Carina)	100000
LOCKHART, HERBERT	100000
CARLOS TRADING, LLC	100000
CROWN MOUNTAIN WATER	80000
AASA WATER SUPPLY	75000
CONTRANT RESORT/ MAHOGANY RUN GOLF COURSE	75000
US ENVIRONMENTAL PROTECTION AGENCY (Remediation Site)	72000
HARBORVIEW APARTMENTS	70000
DVERGSTEN COMPANY, INC	70000
HARBORSIDE CORP/ BOLONGO BAY BEACH RESOT	65000
CHARLES O SCHUSTER TRUST	60000

COUNTRY WATER	60000
MCM TRUCKING	60000
SOUTHGATE GARDENS, INC	60000
GRENMA,INC. DBA PEPPERTREE TERRANCE	60000
VIRGIN WATER, INC.	56000
Krystal Spring LLC Water Delivery	50000
AQUARION SYSTEM, INC.	50000
REYNOLDS, TIMOTHY & KAREN	50000
EGLIN, GENE	50000
VIRGIN BEVERAGES RIXSKIS, INC	50000
O'NEIL, RAYMOND & CANTON, REUBEN	50000
SAPPHIRE BAY CONDO. WEST	45000
VIRGIN ISLANDS PORT AUTHORITY	45000
COUNTRY DAY SCHOOL	40000
HEAVY MATERIAL, LLC	40000
SCHEUER, WALTER	36000
WESTIN ST. JOHN HOTEL CO.	35000
ST. CROIX DAIRY PRODUCTS, INC.	30000
SCHNELL, DONALD	30000
LOFTUS, NOEL	30000
La Reine Laundry	30000

CARIBBEAN HYDRO-TECH INC	30000
COFFELT, GORDON L.	30000
MARCOS WATER	30000
TUTU PARK LTD	28000
Sunny Isle Laundry	25000
Castle Coakley Laundry	25000
RELIANCE LOVENLUND ASSOCIATES, LLLP	24000
UNITED CORPORATION	24000
VIRGIN ISLANDS NATIONAL PARK	22500
Krystal Spring LLC Water Delivery	20000
AMERICAN YACHT HARBOR	20000
SOOKRAM, SIEWDATH	20000
LITTLE ST. JAMES, LLC/EPSTEIN JEFFREY	20000
CHENAY BAY BEACH RESORT	20000
COAKLEY BAY CONDOMINIUMS	20000
ST. THOMAS DAIRIES/ TRANS-CARIBBEAN CORP.	20000
VIRGIN ISLANDS NATIONAL PARK	19000
GINN LA USVI GULF, LLLP	18400
BATES TRUCKING & TRASH REMOVAL, INC	18000
MARSH, GENEVIEVE	15000
VIRGIN ISLANDS MONTESORRI	15000

SCHOOL	
SUGAR ESTATE ASSOCIATES	15000
FELIX, EMMANUEL	15000
UNIVERSITY OF THE VIRGIN ISLANDS	15000
SWEET LIME VILLAGE HOMEOWNERS ASSOC	14400
ST. CROIX MUTUAL HOMES	14000
VIRGIN ISLANDS DEVELOPMENT CORP.	13000
LE BLEU WATER INC	13000
PARRIS, JOHN JR.	12000
YARD CARE LLC/ PC LANDSCAPING	12000
RELIANCE HOUSING SERVICES, LLC	10000
MATTHIAS, DOUGLAS	10000
LIBURD, ALMANDO	10000
BERRY, CRYSTALIA	10000
ROSS ESTATES INC.	10000
EMERALD BEACH CORPORATION	10000
SAINT JOHN LAND INVESTMENT, LTD.	8640
BRUGAL RUM & CO	7500
CANDLE REEF II ASSOCIATION	6000
ISAAC, FERNANDO & LEIDA	6000

DEPARTMENT OF EDUCATION	6000
MAHARAJ, PREMA	6000
WEEDEN, DONALD	5100
CANTON, MARIO	5000
ROLLER, HUGO	5000
BEER, BENJAMIN	5000
WATERGATE VILLAS WEST ASSOCIATION	5000
BURNNETT TOWERS CONDO.	5000
CALEDONIA SPRINGS	5000
COHEN, LAURENCE B. & WENDY H.	4500
STEWART, DOUG	4500
Heavy Material VI LLC	4500
DEPARTMENT OF AGRICULTURE	4500
WINDWARD PASSAGE HOTEL	4320
SOLOMON'S PLAZA, INC.	4000
CALLSEN, KATHRYN O.	4000
ST. CROIX AMERICAN YOUTH SOCCER ORGANIZATION	4000
GENTLE WINDS CONDOMINIUM ASSOCIATION, INC	3600
FRANCIS, EDWARD SLIM	3000
COLONY COVE ASSOCIATION	3000
DEWOLFE, HOWARD/BOTANICAL GARDENS,INC	3000

TURNBULL, WALLACE	3000
J.B. JONES FARMS	2500
ROHN, LEE	2500
LAPLACE, LARRY	2500
LAPLACE, LARRY	2500
RHF LOVENLUND ASSOCIATES, LTD.	2500
BOSCHULTE, JAMES	2500
FRANCIS WATER	2200
LUTHERAN SOCIAL SERVICES (QUEEN LOUIS HOME)	2000
BRADY, JOHN	2000
SCHUSTER, ELLEN	2000
FARBER, NADIA	2000
WHARFSIDE VILLAGE	2000
MARSH, RUPERT	2000
RUTNIK, ANDREW	2000
CARIBBEAN MINI GOLF	2000
B&W REALITY INVESTMENT LTD.	2000
MAYNARD, PAUL V.	2000
VIRGIN ISLAND DEPARTMENT OF PUBLIC WORKS	2000
GOOD HOPE COMMUNITY TOWN HOUSE	1800
FREDERICK, HUBERT	1500

RICHARD & LAURIE WOOD TRUST U/T/D	1500
TK PROPERTIES, INC.	1500
DEPARTMENT OF AGRICULTURE	1500
STEVENS, CARLTON L.	1500
EMANUEL, DESMOND	1500
ESTATE CARLTON CONDOMINIUM	1500
DEPARTMENT OF AGRICULTURE	1400
SOUTHGATE FARM, INC.	1200
GONZALEZ, DEMETRIUS	1000
ARRENDELL, VINCENT A.	1000
GEORGE, CLINTON	1000
THE GOLDEN TWIN APARTMENT	1000
KEMBA MASSOMA & ANA KAZA	1000
WALLACE, LEOPOLD	1000
RUDOLPH A. JR. - PIMPY'S	1000
MASSAC, CHRISTOPHER KEITH	1000
LAKE, GEORGE	1000
CHARLES, MICHEL	1000
BOYLAN, JEFF	1000
PACHECO, RAFTER & RUBY	1000
K & C DEVELOPMENT, LLC	1000
LARCHEVEAUX, ARCHIBALD	1000
THOMAS, RUDOLPH	1000

CARIB BEACH RESORT	1000
ELMOUR, MARTIN	1000
FRANCIS, WINSTON S.	1000
SUNNY ISLE DEVELOPERS LLC	1000
THE M.K. ARMSTRONG TRUST	1000
ISLAND MEDICAL CENTER	1000
PETERSEN, LUISA	1000
LORRAINE ASSOCIATES	1000

Table IV.C.5. Wells selected by risk to populace				
System Name	**Class**	**Category**	**Source**	**Findings**
Aqua-Mist	TNC	Water Bottler	R/GW	Purchased water for bottling. Well now only serves Laundromat on site; unable to access well, owner is finding keys.
Francis Water Service Delivery & Sales	TNC	Water Source	GW	Out of service; well requires work and better protection.
Francis Purified Water	BW	Bottled Water	GW	Out of service; well requires work and better protection.
Bates Trucking	TNC	Water Source	R/GW	Well is sited with many areal threats. Site housekeeping is notably good.
Caledonia Spring	TNC	Bottled Water	R	Well out-of-service and with acceptable surface closure. Bottling RO water purchased from others.
Country Water	TNC	Water Source	GW	Nominally this well is also treated by RO. Not verified through site and well visited. Distribution lines from abandoned well need to be blanked and some concerns with cistern.
Crystal Springs	TNC	Water Source	GW	Uses former WAPA La Grange well. Well is nearly acceptable; numerous areal threats.
Marcos Trucking	TNC	Water Source	R/GW	Wells difficult to verify; encased in RC structures. Fuel stored on-site next to subsurface electrical service. Site housekeeping particularly good.
Carlton Gardens	TNC	Water Source	GW	1-D Estate Carlton
Emmanuel's Service	TNC	Water Source	R/GW	Unprotected abandoned well adjacent to production well; surface threats. Owner is particularly responsive.
Galloway's Delivery	TNC	Water Source	R/GW	Out-of-service. Well is well-sited and seal is acceptable. Significant areal threats.

Table IV.C.5. Wells selected by risk to populace				
System Name	**Class**	**Category**	**Source**	**Findings**
Schuster Water Delivery (Blue Mountain Water)		Water Source/ Bottled Water		Particularly good seals and siting on 2 wells in service. A third well under development (or rehabilitation) is open and needs attention. Significant areal threats.
Southgate Gardens	TNC	Water Source	GW	Unable to access; will continue. It is thought that Seven Seas is serving most of their former customers.
United Corp. Standpipe	TNC	Water Source	R/GW	Wells for shopping center need proper sanitary seals. Located in sump conditions and need to be reviewed for this.
Carino's Water Service	TNC	Water Source	GW	Out-of-service; now operated by Paradise Purification
Unknown vendor		Water Source (supplies some water for bottlers)	GW	Near USVI National Guard at corner of MG Jean Augustine Romney Memorial Drive. Not able to enter, but significant threat from heavy use for livestock on site.
Paradise Purification	BW	Bottled Water	W/GW	Shallow well nominally out of service. Well and seal are acceptable but significant areal threats.
Divi Carina Bay Resort	NTNC	Hotel	GWR	
Sunny Isle Shopping Center	NTNC	Corp	R/GW	Wells not all seen; to date are well done and seals are acceptable.
Lorraine Village	C	Apt	R/W/GW	20 & 21-A Estate Plessen
Buccaneer Hotel (replicate of use table)	NTNC	Hotel	R/GW	Estate Shoy
Diamond Cinema	NTNC	Corp	R/GW	Plot# 93A Estate Diamond
Med-Isle I	NTNC	Corp	R/W/GW	29D Estate Diamond-Suite 47

Table IV.C.5. Wells selected by risk to populace				
System Name	**Class**	**Category**	**Source**	**Findings**
Village Mall	NTNC	Corp	R/WGW	113 Estate Barren Spot
St. Croix Mutual Homes #14/15	C	Apt	R/W/GW	Well protected and seal acceptable.
St. Croix Mutual Homes #22/23	C	Apt	R/W/GW	Well protected and seal acceptable.
St. Croix Mutual Homes #36	C	Apt	R/W/GW	Well protected and seal acceptable.
St. Croix Mutual Homes #44/45	C	Apt	R/W/GW	Not served by wells
St. Croix Mutual Homes #54/55	C	Apt	R/W/GW	Not served by wells.
Queen Louise Home*	C	Corp	R/GW	71 Estate Concordia

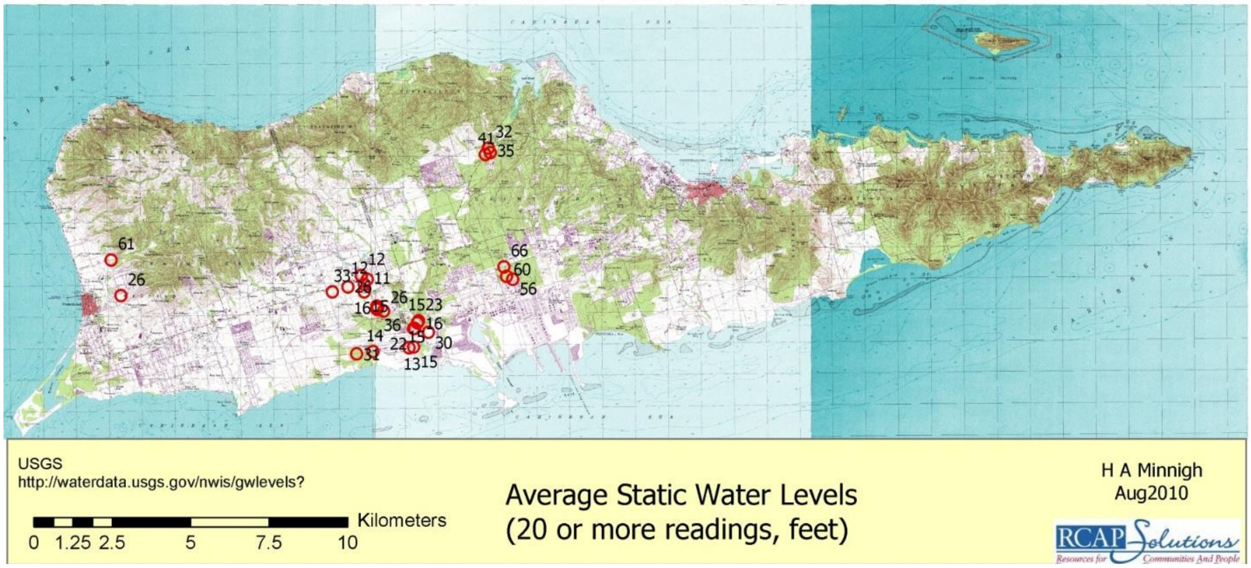


Figure IV.C.27. Average Static Water levels in wells on St. Croix.

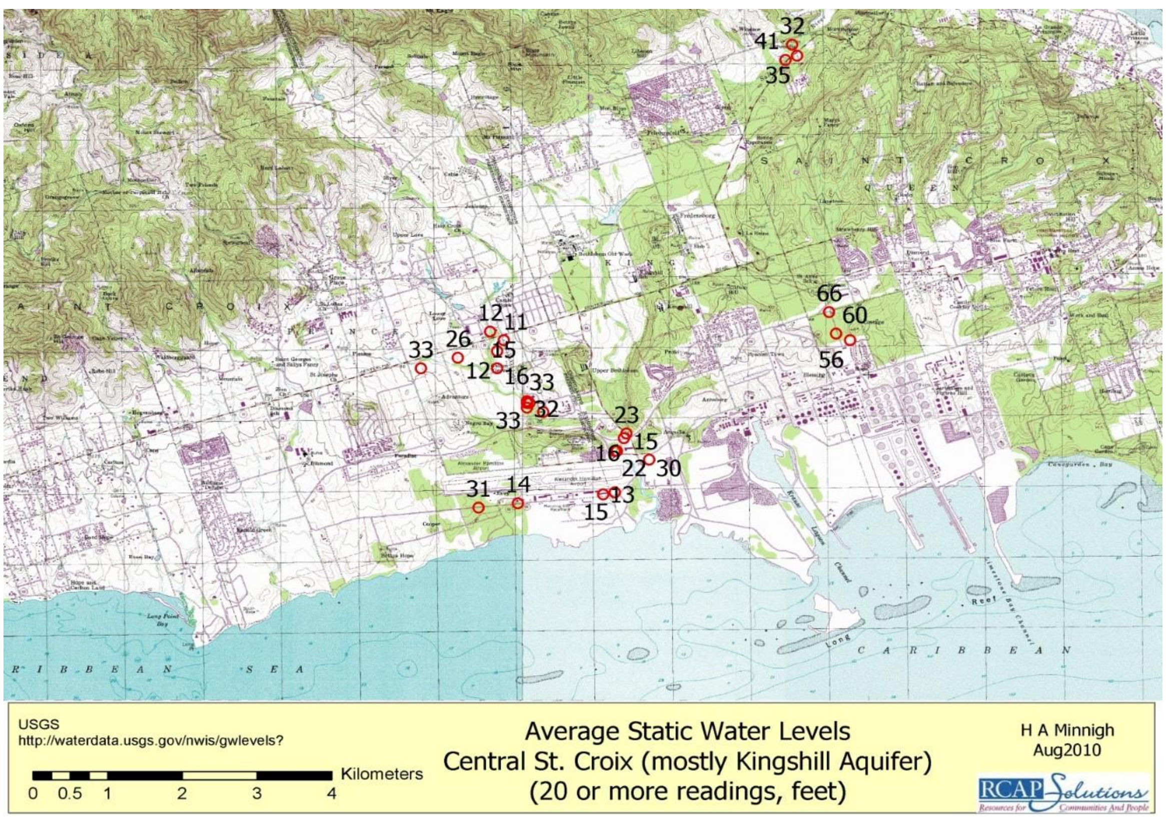


Figure IV.C.28. Static water levels, central St. Croix.

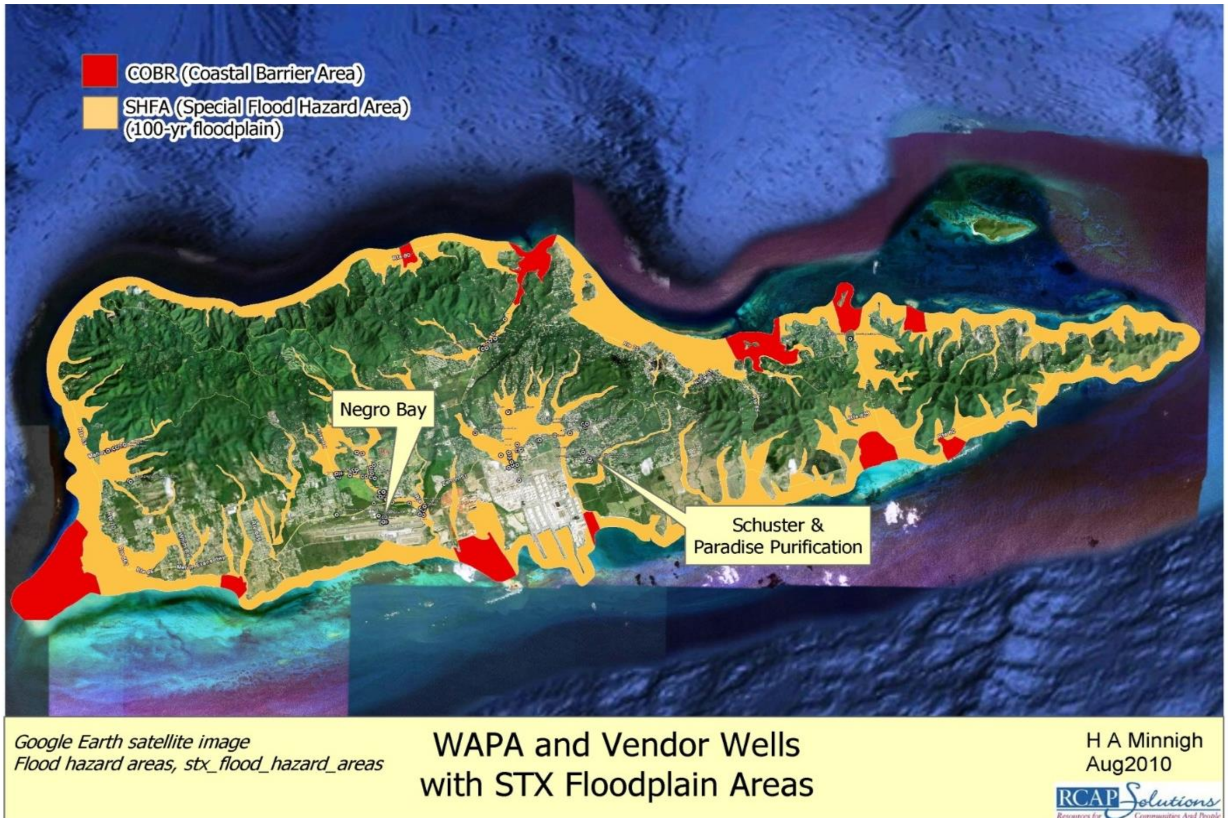


Figure IV.C.29. Flood Risks and Production Wells

Figure IV.C.30. Wellhead Protection Zone, La Grange

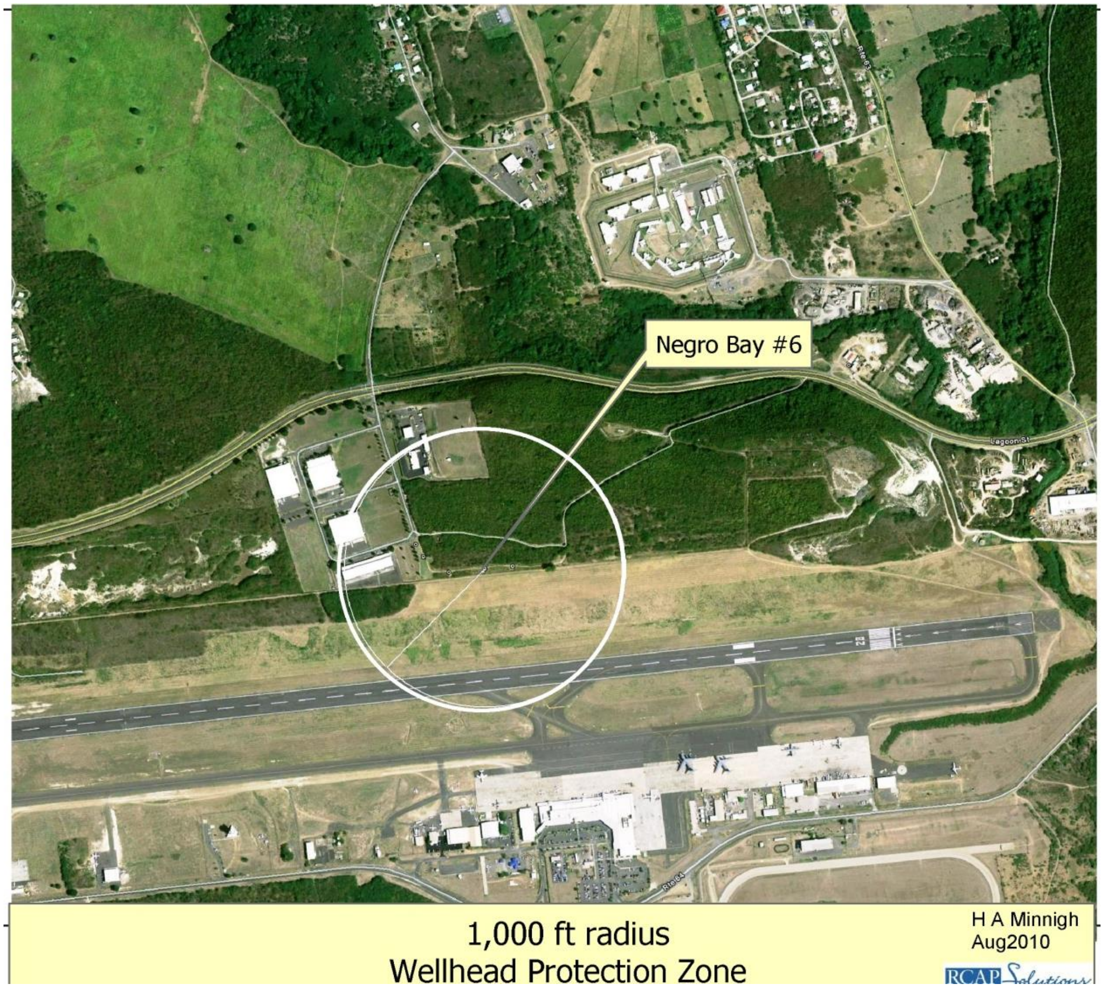


Figure IV.C.31. Wellhead Protection Zone, Negro Bay #6

Appendix 1: 2016 303(d) List Narrative

2016 U.S. Virgin Islands
303(d) List of Impaired Waters

April 2016

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I. SUMMARY

Section 303(d) of the Clean Water Act requires States and Territories to develop a list of impaired waters (needing Total Maximum Daily Loads, TMDLs) every even-numbered calendar year. An impaired waterbody is one for which technology-based pollution controls are not stringent enough to attain or maintain compliance with applicable State and Territory water quality standards. In order for a water quality-limited waterbody to attain water quality standards, a TMDL or other approved alternative management or protection plan must be developed and implemented specifically for that waterbody and/or pollutant(s) combination of concern. A TMDL is a quantitative assessment of the amount of pollution that a certain waterbody can assimilate while still meeting water quality standards.

EPA regulations require States and Territories to:

- Identify water quality limited waters still requiring TMDLs after the implementation of technology-based or other pollution controls.
- Establish a priority ranking of these waters.
- Identify pollutants causing impairment.
- Identify waters targeted for TMDL development over the next two (2) years.

II. LIST DEVELOPMENT

This 2016 submission, required under Section 303(d)(1)(A) of the Clean Water Act, requires submission of a biennial list of water quality-limited waters, which identifies waters that are not supporting designated uses because they do not meet surface water quality standards despite the implementation of technology-based effluent limits.

The complete list of data sources used to develop the USVI 2016 Section 303(d) list is as follows:

- U.S. Virgin Islands Ambient Monitoring data from Fiscal Years 2013-2015 (VI Department of Planning & Natural Resources, VIDPNR)
- U.S. Virgin Islands BEACH Monitoring data from Fiscal Years 2014-2015 (VIDPNR)
- 2014 U.S. Virgin Islands Section 305(b) Report (VIDPNR)2014 303(d) List (VIDPNR)

The above list of data represents all existing and readily available data for the 2016 submission. This data is limited and many waters have been listed based on a suspected impairment.

On November 2, 2015, the Division of Environmental Protection (DEP) began its data solicitation notice process announcing that data would be accepted until December 2, 2015. Additionally, letters were sent to the following agencies to request relative data: Environmental Protection Agency (EPA) Region 2; US Fish & Wildlife Service; National Park Service; University of Virgin Islands-Cooperative Extension Service and Center of Marine and Environmental Services; National Marine Fisheries Service; US Geological Survey and National Oceanic and Atmospheric Administration-National Undersea Research Program and Coral Reef Conservation Program; VI Department of Health; US Department of Agriculture; The Nature Conservancy. There were no responses to submit relative data.

III. DATA NOT USED

From the complete list of data sources used to develop the USVI 2016 Section 303(d) list as noted above in Section II, several data sets were not used. Those data sets, and reasons they were not used, are as follows:

- **pH data taken from AUs in the St. Croix District on 9/10/13, 9/29/13, and 9/30/13:** This data set was not used as these values were flagged in StoRet with the following note: "measured pH value is suspect even though calibration was completed". DPNR has reason to believe that due to the significantly high pH values found across the majority of monitoring stations during these sample dates, as well as the above note in StoRet, that the in-situ readings were not representative of the water quality conditions.

- **All data taken from AUs in the St. Croix District on 12/10/13, 12/11/13, and 12/12/13:** This data set was not used as these values were flagged in StoRet with the following note: "Sampling occurred during repeated heavy rain and large waves. Visible sediment plumes were present from shore to sampling location. Seagrass and garbage were present in water column.". DPNR has reason to believe that due to the significant rain event and effects it had on the water's condition as the above note in StoRet, that the in-situ readings were not representative of the water quality conditions.
- **pH data taken from AUs in the St. Croix District on 9/16/14, 9/17/14, and 9/18/14:** This data set was not used as these values were flagged in StoRet with the following note: "measured pH value is suspect even though calibration was completed". DPNR has reason to believe that due to the significantly high pH values found across the majority of monitoring stations during these sample dates, as well as the above note in StoRet, that the in-situ readings were not representative of the water quality conditions.
- **pH data taken from AUs in the St. Croix District on 12/9/14, 12/12/14, and 12/18/14:** This data set was not used as these values were flagged in StoRet with the following note: "pH value outside expected range despite probe being calibrated and passing calibration checks". DPNR has reason to believe that due to the significantly high pH values found across the majority of monitoring stations during these sample dates, as well as the above note in StoRet, that the in-situ readings were not representative of the water quality conditions.

IV. DELISTING ACTIONS

The following Assessment Unit impairments have been delisted for this cycle:

AU ID	AU Name	Associated Monitoring Stations	Priority	Class	Impairment	ADB Delisting Code
VI-STC-25	Princess subwatershed, offshore	STC-35	Low	B	Turbidity	13
VI-STC-27	Long Reef Forereef, East	STC-35A STC-36	Low	B	pH	13
VI-STC-35	Tamarind Reef Lagoon (Southgate Lagoon)	STC-4	High	B	Dissolved Oxygen	13
VI-STC-41	Buck Island Backreef	STC-6, STC-7	Low	A	Turbidity	13
VI-STC-63	Martin-Marietta Alumina Harbor	STC-19, STC-20	Low	C	Phosphorous	13
VI-STC-65	HOVENSA West	STC-21, STC-22A	Low	B	Enterococci	13
VI-STC-65	HOVENSA West	STC-21, STC-22A	Low	B	Phosphorous	13
VI-STJ-02	Hawksnest Bay	STJ-44B, NPS-3, NPS-4, VI255380	Low	B	Turbidity	13
VI-STJ-25	Rendezvous Bay	STJ-47, NPS-23, VI204627, VI402599	Low	B	Enterococci	13
VI-STJ-25	Rendezvous Bay	STJ-47, NPS-23, VI204627, VI402599	Low	B	pH	13
VI-STJ-26	Chocolate Hole	STJ-46, NPS-24, VI391298	Low	B	pH	13
VI-STJ-26	Chocolate Hole	STJ-46, NPS-24, VI391298	Low	B	Turbidity	13
VI-STJ-29	Turner Bay/Enighed Pond	STJ-55, NPS-26	Low	B	Turbidity	13
VI-STT-01	Botany Bay	STT-9	Low	B	pH	13
VI-STT-02	Stumpy Bay	STT-10	Low	B	pH	13
VI-STT-04	Santa Maria Bay	STT-11	Low	B	pH	13
VI-STT-05	Caret Bay	STT-12	Low	B	pH	13
VI-STT-07	Dorothea	STT-13	Low	B	pH	13
VI-STT-15	Sunsi Bay	STT-17B	Low	B	pH	13
VI-STT-15	Sunsi Bay	STT-17B	Low	B	Turbidity	13

VI-STT-16	Spring Bay	STT-17A	Low	B	pH	13
VI-STT-17	Mandahl Bay Subwatershed, Offshore	STT-16A, STT-18, VI577932	Low	B	pH	13
VI-STT-22	Red Bay	STT-21B	Low	B	pH	13
VI-STT-24	Red Hook Bay	STT-22A VI1764950	Low	B	Enterococci	13
VI-STT-36	Frenchman Bay Subwatershed East	STT-28A, STT-28B, VI951607	Medium	B	Dissolved Oxygen	13
VI-STT-51	Krum Bay	STT-4	Low	C	Turbidity	13
VI-STT-54	Perseverance Bay, Offshore	STT-6B	Low	B	Dissolved Oxygen	13
VI-STT-56	Perseverance Bay	STT-7B	Low	B	Dissolved Oxygen	13
VI-STT-57	Fortuna Bay	STT-8	Low	B	Turbidity	13

V. U.S. VIRGIN ISLANDS MONUMENT LANDS

Assessment Units that fall within the National Park Service boundaries were monitored and assessed during this reporting cycle for FY2013-2015; however, only during the last 2 quarters of FY15. Assessment of the data found 2 AUs that fall within the National Park Service boundaries to be impaired. VI-STJ-19 (Great Lamshur Bay) was found to be impaired for Phosphorous and VI-STJ-30 (Cruz Bay) was found to be impaired for Turbidity and Phosphorous.

VI. LISTING ACTION

The EPA released a guidance memorandum for developing the 2016 Integrated Water Quality Monitoring and Assessment Report that serves to supplement all previously-issued assessment guidances issued in 2006, 2008, 2010, 2012 and 2014. Waterbody assessment units are classified into one of five categories. Below are the categories DPNR used for 2016 assessments:

Category 1

The assessment unit is placed in this category if it meets the water quality standards for the parameters that define support for both Primary Contact Recreation (PCR) & Aquatic Life Use Support (ALUS).

Category 2

The assessment unit is placed in this category if it attains water quality standards for the parameters that define support for either PCR or ALUS but data is insufficient to determine support for the other use. In addition, for the assessment unit placed in this category there is no data to indicate if one or both uses are threatened under the US EPA definition of “threatened”. Waters placed within this category will be scheduled for more extensive monitoring in the USVI's multi-year monitoring schedule.

Category 3

The assessment unit is placed in this category if only insufficient, inconclusive or unreliable/low quality data or no data at all is available to determine if water quality standards are attained and if any of designated uses (PCR or ALUS) is supported.

For the 2016 Integrated Report, DEP proposes the following Category 3 subcategories:

Category 3A

No data is available from data sources the identified, in Section II above data, for the assessment unit in question.

Category 3B

Only insufficient data is available from the identified data sources, in Section II above, for the assessment unit in question. Insufficient data is defined as data collected for less than eight quarters during 2 year-period. Such insufficient data precludes VIDPNR from being able to assess if any of the designated uses are supported. The Virgin Islands considers data to be insufficient if it was collected during less than eight quarters within 2 year-period. Such data may be reviewed on a case-by-case basis if it strongly suggests that water quality standards are exceeded and the designated uses are impaired. Such waters may be eligible for inclusion on the 303(d) List. Remaining waters with insufficient data will be scheduled for more extensive monitoring in the USVI's multi-year monitoring schedule.

Category 3C

Only inconclusive data is available from the identified data sources for the assessment unit in question. This might include information from studies that do not directly provide information related to water quality standards. Such as inconclusive data precludes VIDPNR from being able to assess if any of designated uses is supported.

Category 3D

Only unreliable or low quality data is available from the identified data sources for the assessment unit in question. Unreliable or low quality data is defined as data sets that have significant gaps, obvious anomalies, etc. Such unreliable or low quality data precludes VIDPNR from being able to assess if any of the designated uses are supported.

Category 4

Assessment units that are found to be partially supporting or not supporting one or both designated uses are placed in category 4 under the appropriate subcategory (4A, 4B, 4C).

Category 4A

The assessment unit is placed in this category if it was previously listed on the 303(d) list and a TMDL has been already established and approved by EPA.

Category 4B

The assessment unit is placed into this category only if other pollution control requirements are expected to address all water-pollutant combinations and attain all water quality standards within a reasonable period of time. The Virgin Islands considers a reasonable period of time as being the time between reporting cycles. If the impairment is the result of a point source discharge, is expected that the Territorial Pollution Discharge Elimination System (TPDES) program will take appropriate measures to control point source pollution. If the impairment is the result of nonpoint source pollution, DPNR will provide evidence that a pollution control measure is in place.

Category 4C

The waterbody/pollutant combination is placed into this category when it is demonstrated that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Waterbody/pollutant combinations placed in Category 4C do not require the development of a TMDL. Pollution as defined by the CWA is "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." A designated Category 4C waterbody/pollutant combination will continue to be monitored to confirm that there are no pollutants associated with the failure to meet the water quality standard.

Category 5

The assessment unit is placed into this category if water quality standards are exceeded in which case a TMDL will be established. Assessment units that are placed into Category 5 will be placed on the 2016 303(d) Total Maximum Daily Load List.

VII. WATERBODY DELINEATION

The US Virgin Islands has created a standard waterbody delineation that organizes the coastal waters of the Virgin Islands into assessment units. This delineation is based on (in order of consideration):

1. Legal limits of water quality classifications
2. Subwatershed boundaries
3. Shoreline geomorphology
4. Benthic geomorphology
5. Bathymetry
6. Benthic habitats
7. 305(d) listing and TMDLs
8. Management areas
9. 305(b) assessment

In the 2016 Integrated Report, these delineated assessment units have been grouped into categories. No assessment unit boundaries have changed since the 2014 assessment.

VIII. ASSESSMENT UNITS LISTED IN 2016

The following waterbody/pollutant combinations were listed as water quality impaired in previous cycles and remain listed in 2016 for the impairments specified below.

-Frederiksted Harbor (VI-STC-02) contains DPNR ambient monitoring stations: STC-28 Frederiksted Pier, STC-29 Frederiksted Public Beach and VI Beach Program monitoring station VI970611 F'sted (Fst. Target). This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Prosperity, nearshore (VI-STC-04) contains DPNR VI Beach Program monitoring station VI252619 Rainbow (Prosperity). This assessment unit has been listed for Turbidity.

-Sprat Hall Beach (VI-STC-06) contains DPNR ambient monitoring station STC-30 Sprat Hall Beach and VI Beach Program monitoring station VI645288 Sprat Hall. This assessment unit has been listed for Phosphorus, Turbidity, and Dissolved Oxygen.

-Cane Bay (VI-STC-12) contains VI Beach Program monitoring station VI201013 Cane Bay. This assessment unit has been listed for Turbidity.

-Baron Bluff Subwatershed (VI-STC-13) contains DPNR ambient monitoring station STC-31 Davis Bay and VI Beach Program monitoring station VI398766 Davis Bay. This assessment unit has been listed for Enterococci, Dissolved Oxygen, and Turbidity.

-Salt River Lagoon, Marina (VI-STC-16) contains DPNR ambient monitoring stations STC-33 Salt River Marina and STC-33C Salt River Lagoon, Marina. This assessment unit has been listed for Enterococci, Fecal Coliform and Turbidity.

-Salt River Bay (VI-STC-18) contains DPNR ambient monitoring stations STC-33A and B Salt River (Columbus Landing Beach) and VI Beach Program monitoring stations VI146901 Gentle Winds and VI558328 Columbus Landing. This assessment unit has been listed for Enterococci, Turbidity and Fecal Coliform.

-St. Croix-By-the-Sea (VI-STC-23) contains DPNR ambient monitoring station STC-34 St. Croix-By-the-Sea and VI Beach Program monitoring station VI738082 Pelican Cove. This assessment unit has been listed for pH and Turbidity.

-Long Reef Backreef, West (VI-STC-24) contains DPNR ambient monitoring station STC-48 Long Reef Backreef, West. This assessment unit has been listed for Enterococci.

-Christiansted Harbor (VI-STC-26) contains DPNR ambient monitoring stations STC-37 Christiansted Harbor Entrance West, STC-40 St. Croix Marine, STC-41 Gallows Bay, STC-42 Public Wharf, STC-43 Water Gut Storm Drain, STC-44 Protestant Cay Beach, STC-46 WAPA Intake, STC-47 Mill Harbor Condominium Beach, and VI Beach Program monitoring station VI572166 Condo Row (Princess). This assessment unit has been listed for Turbidity.

-Christiansted Harbor, East (VI-STC-29) contains DPNR ambient monitoring stations STC-1 Lagoon Recreational Beach, STC-39 Altona Lagoon Inlet and VI Beach Program monitoring station VI213332 New Fort Louise Augusta. This assessment unit has been listed for Dissolved Oxygen, Enterococci, Fecal Coliform and Turbidity.

-Beauregard Bay (VI-STC-30) contains DPNR ambient monitoring stations STC-2 Ft. Louise Augusta Beach, STC-38 Christiansted Harbour Entrance-East and VI Beach Program monitoring station VI651587 Buccaneer. This assessment unit has been listed for Secchi Depth, Turbidity and Fecal Coliform.

-Buccaneer Beach (VI-STC-31) contains DPNR ambient monitoring station STC-3 Buccaneer Hotel. This assessment unit has been listed for Dissolved Oxygen and Fecal Coliform.

-Punnett Bay (VI-STC-33) contains DPNR VI Beach Program monitoring station VI610321 Shoy's. This assessment unit has been listed for Turbidity.

-Tamarind Reef Lagoon (Southgate Lagoon) (VI-STC-35) contains the DPNR ambient monitoring station Tamarind Reef Lagoon (STC-4). This assessment unit has been listed for Fecal Coliform.

-Green Cay Beach (VI-STC-36) contains DPNR VI Beach Program monitoring station VI563397 Chenay Bay Beach. This assessment unit has been listed for Enterococci and Turbidity.

-Southgate Subwatershed, Offshore (VI-STC-37) contains DPNR ambient monitoring station STC-5 Green Cay Beach. This assessment unit has been listed for Dissolved Oxygen, Fecal Coliform, Enterococci and Turbidity.

-Teague Bay (VI-STC-39) contains DPNR ambient monitoring stations STC-8 Reef Club Beach, STC-9 St. Croix Yacht Club Beach, UVI Supplemental Site and VI Beach Program monitoring station VI381319 Teague Bay (Reef). This assessment unit has been listed for Dissolved Oxygen, Turbidity, pH and Fecal Coliform.

-Teague Bay Backreef (VI-STC-40) contains DPNR ambient monitoring station STC-10 Cramer's Park and VI Beach Program monitoring station VI351774 Cramer’s Park. This assessment unit has been listed for Turbidity, pH and Fecal Coliform.

-Grapetree Bay (VI-STC-46) contains DPNR ambient monitoring station STC-11B Isaacs Bay Forereef. This assessment unit has been listed for Dissolved Oxygen.

-Turner Hole Backreef (VI-STC-47) contains VI Beach Program monitoring station VI297470 Grapetree Beach. This assessment unit has been listed for Enterococci and Turbidity.

-Bugby Hole Backreef (VI-STC-56) contains DPNR ambient monitoring stations STC-14A Halfpenny Bay - Manchenil, STC-14B Halfpenny Backreef and VI Beach Program monitoring station VI931289, Halfpenny. This assessment unit has been listed for Enterococci, Phosphorus and Turbidity.

-Canegarden Bay (VI-STC-59) contains DPNR ambient monitoring station STC-15 Canegarden Bay. This assessment unit has been listed for Phosphorus and Turbidity.

-Hess Oil Virgin Islands Harbor (VI-STC-61) contains DPNR ambient monitoring stations STC-16 HOVENSA East Turning Basin, NW Corner and STC-17 HOVENSA West Turning Basin, NW Corner. This assessment unit has been listed for Enterococci, Phosphorus, Temperature, Dissolved Oxygen and Turbidity.

-Limetree Bay (VI-STC-62) contains DPNR ambient monitoring station STC-18 Limetree Bay Container Port. This assessment unit has been listed for Fecal Coliform.

-Martin-Marietta Alumina Harbor (VI-STC-63) contains DPNR ambient monitoring stations STC-19 Krause Lagoon Channel and STC-20 Alumina Plant Dock. This assessment unit has been listed for Dissolved Oxygen.

-Manning Bay/Estate Anguilla Beach (VI-STC-64) contains DPNR ambient monitoring station STC-23 Public Dump. This assessment unit has been listed for Turbidity, Phosphorus and Fecal Coliform.

-HOVENSA, West (VI-STC-65) contains DPNR ambient monitoring stations STC-21 Spoils (Ruth) Island and STC-22A Treatment Plant (POTW) Outfall. This assessment unit has been listed for Fecal Coliform and Enterococci.

-Diamond Subwatershed, Offshore (VI-STC-75) contains DPNR ambient monitoring station STC-24B Rum Plant (VI Rum) Outfall. This assessment unit has been listed for Dissolved Oxygen, Turbidity, Phosphorus, Enterococci, Secchi Depth and Toxicity.

-Carlton Beach (VI-STC-76) contains DPNR ambient monitoring station STC-25 Long Point. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Good Hope Beach (VI-STC-79) contains DPNR ambient monitoring station STC-26. This assessment unit has been listed for Enterococci.

-Sandy Point, Nearshore West (VI-STC-82) contains DPNR ambient monitoring station STC-27 Sandy Point Public Beach, and VI Beach Program monitoring stations VI896490 Dorsch Bay and VI907985 Stony Ground. This assessment unit has been listed for Enterococci, Turbidity and Dissolved Oxygen.

-Caneel Bay (VI-STJ-01) contains DPNR ambient monitoring station STJ-54 Caneel Bay, NPS monitoring station NPS-1 Caneel Bay, and VI Beach Program monitoring station VI658467 Caneel Beach. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Hawksnest Bay (VI-STJ-02) contains DPNR ambient monitoring station STJ-44B Hawksnest Bay, NPS monitoring stations NPS-3 Hawksnest (Middle Beach) and NPS-4 Hawksnest (Gibney Beach), and VI Beach Program monitoring station VI255380 Oppenheimer. This assessment unit has been listed for Dissolved Oxygen.

-Trunk Bay (VI-STJ-03) contains DPNR ambient monitoring station STJ-44A Trunk Bay and NPS monitoring station NPS-5 Trunk Bay. This assessment unit has been listed for Dissolved Oxygen.

-Cinnamon Bay (VI-STJ-05) contains DPNR ambient monitoring station STJ-44C Cinnamon Bay and NPS monitoring stations NPS-6 Peter Bay and NPS-7 Cinnamon Bay. This assessment unit has been listed for Dissolved Oxygen.

-Maho Bay/Francis Bay (VI-STJ-06) contains DPNR ambient monitoring station STJ-44D Francis Bay, NPS monitoring stations NPS-8 Maho Bay and NPS-9 Francis Bay, and VI Beach Program monitoring station VI536165 Big Maho Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Coral Harbor (VI-STJ-13) contains DPNR ambient monitoring stations STJ-53 Coral Bay and STJ-56 Johnson Bay, NPS monitoring stations NPS-15 Coral Bay Dock, NPS-16 Johnson Bay, UVI Supplemental Site and VI Beach Program monitoring stations VI823989 Johnson's Bay. This assessment unit has been listed for Enterococci, Turbidity and pH.

-Round Bay (VI-STJ-15) contains DPNR ambient monitoring station STJ-57 Round Bay. This assessment unit has been listed for Enterococci.

-Great Lameshur Bay (VI-STJ-19) contains DPNR ambient monitoring stations STJ-50, STJ-51, and UVI Supplemental Site. This assessment unit has been listed for Turbidity and pH.

-Fish Bay (VI-STJ-23) contains DPNR ambient monitoring stations STJ-48 Fish Bay and NPS monitoring station NPS-22 Fish Bay. This assessment unit has been listed for pH and Turbidity.

-Rendezvous Bay (VI-STJ-25) contains DPNR ambient monitoring station STJ-47 Rendezvous Bay, NPS monitoring station NPS-23 Rendezvous Bay, and VI Beach Program monitoring stations VI204627 Klain Bay and VI402599 Hart Bay. This assessment unit has been listed for Fecal Coliform and Turbidity.

-Chocolate Hole (VI-STJ-26) contains DNPR ambient monitoring station STJ-46 Chocolate Hole, NPS monitoring station NPS-24 Chocolate Hole, and VI Beach Program monitoring station VI402599 Chocolate Hole. This assessment unit has been listed for Dissolved Oxygen.

-Great Cruz Bay (VI-STJ-28) contains DPNR ambient monitoring stations STJ-45 Great Cruz Bay, NPS monitoring stations NPS-25 Great Cruz Bay and VI Beach Program monitoring station VI779192 Great Cruz Bay. This assessment unit has been listed for Turbidity, Dissolved Oxygen and pH.

-Cruz Bay (VI-STJ-30) contains DPNR ambient monitoring stations STJ-43A Cruz Bay, North; STJ-43B Cruz Bay, South; STJ-43C Cruz Bay, North of Seaplane Ramp; STJ-43D Cruz Bay, Creek North; NPS-27 Cruz Bay (ferry dock); NPS-28 Cruz Bay (airplane ramp); NPS-29 Cruz Bay (NPS dock); and VI Beach Program monitoring station VI309453 Cruz Bay. This assessment unit has been listed for Fecal Coliform, Turbidity, Secchi Depth, Dissolved Oxygen, pH and Enterococci.

-Great Cruz Bay Watershed, Offshore (VI-STJ-31) contains VI Beach Program monitoring station VI456779 Frank Bay. This assessment unit has been listed for Turbidity.

-Southwest St. John, Offshore (VI-STJ-32) contains DPNR ambient monitoring station STJ-OFF4. This assessment unit has been listed for Turbidity. Stumpy Bay (VI-STT-02) contains DPNR ambient monitoring station STT-10 Stumpy Bay. This assessment unit has been listed for Turbidity.

-Botany Bay (VI-STT-01) contains DPNR ambient monitoring station STT-9 Botany Bay. This assessment unit has been listed for Enterococci.

-Stumpy Bay (VI-STT-02) contains DPNR ambient monitoring station STT-10 Stumpy Bay. This assessment unit has been listed for Turbidity.

-Santa Maria Bay (VI-STT-04) contains DPNR ambient monitoring station STT-11 Santa Maria Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Caret Bay (VI-STT-05) contains DPNR ambient monitoring station STT-12 Caret Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Dorothea (VI-STT-07) which contains DPNR ambient monitoring station STT-13 Dorothea. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Hull Bay (VI-STT-08) contains DPNR ambient monitoring station STT-14 Hull Bay and VI Beach Program monitoring station VI616865 Hull Bay. This assessment unit has been listed for Dissolved Oxygen, pH and Turbidity.

-Magen's Bay (VI-STT-10) contains DPNR ambient monitoring stations STT-15, STT-15A, STT-15B Magens Bay and VI Beach Program monitoring station VI672756 Magen's Bay. This assessment unit has been listed for Turbidity, Dissolved Oxygen, pH and Enterococci.

-Mandahl Bay (Marina) (VI-STT-13) contains DPNR ambient monitoring stations STT-16B Mandahl Bay Entrance, STT-16C Mandahl Point Entrance. This assessment unit has been listed for Enterococci, Fecal Coliform, Dissolved Oxygen, and pH.

-Sunsi Bay (VI-STT-15) contains DPNR ambient monitoring station STT-17B Sunsi Bay. This assessment unit has been listed for Dissolved Oxygen.

-Spring Bay (VI-STT-16) contains DPNR ambient monitoring station STT-17A Spring Bay. This assessment unit has been listed for Dissolved Oxygen.

-Mandahl Bay Subwatershed, Offshore (VI-STT-17) contains DPNR ambient monitoring stations STT-16A Mandahl Bay, STT-18 Coki Point Bay and VI Beach Program monitoring station VI577932 Coki Point. This assessment unit has been listed for Turbidity, Dissolved Oxygen, and Fecal Coliform.

-Water Bay (VI-STT-18) contains DPNR ambient monitoring station STT-19 Water Bay and VI Beach Program monitoring station VI591668 Water Bay. This assessment unit has been listed for Dissolved Oxygen and pH.

-Smith Bay (VI-STT-19) contains DPNR ambient monitoring station STT-20 Smith Bay and VI Beach Program monitoring station VI431925 Lindquist Beach. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-St. John Bay (VI-STT-21) contains DPNR ambient monitoring station STT-21A St. John Bay and VI Beach Program monitoring station VI327776 Sapphire Beach. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Red Bay (VI-STT-22) contains DPNR ambient monitoring station STT-21B Red Bay. This assessment unit has been listed for Dissolved Oxygen, Turbidity.

-Vessup Bay (VI-STT-23) contains DPNR ambient monitoring station STT-22B Vessup Bay. This assessment unit has been listed for Temperature and Enterococci.

-Red Hook Bay (VI-STT-24) contains DPNR ambient monitoring station STT-22A Red Hook Bay and VI Beach Program monitoring station VI764950 Vessup Bay. This assessment unit has been listed for Turbidity.

-Great Bay (VI-STT-25) contains DPNR ambient monitoring station STT-23 Great Bay and VI Beach Program monitoring station VI505006 Bluebeards Beach. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Cowpet Bay (VI-STT-28) contains DPNR ambient monitoring stations STT-24 Cowpet Bay and STT-24A Cowpet Bay West. This assessment unit has been listed for Dissolved Oxygen.

-Nazareth Bay (VI-STT-31) contains VI Beach Program monitoring station VI389422 Secret Harbor. This assessment unit has been listed for Turbidity.

-Jersey Bay, Offshore (VI-STT-32) contains DPNR ambient monitoring station STT-25 Nazareth Bay. This assessment unit has been listed for Fecal Coliform.

-Benner Bay Lagoon Marina (VI-STT-34) contains DPNR ambient monitoring stations STT-27D Mangrove Lagoon, Near La Vida Marina and STT-27E Mangrove Lagoon, Near Compass Point. This assessment unit has been listed for Enterococci.

-Mangrove Lagoon (VI-STT-35) contains DPNR ambient monitoring stations STT-27A Mangrove Lagoon, Near Treatment Plant, STT-27B Mangrove Lagoon, Off Sanitary Landfill (East of Eco-tours) and STT-27C Mangrove Lagoon, Near Tropical Marine Fuel Dock. This assessment unit has been listed for Temperature, Dissolved Oxygen* (TMDL in place for BOD) and Enterococci.

-Frenchman Bay Subwatershed East (VI-STT-36) contains DPNR ambient monitoring stations STT-28A Bovoni Bay, STT-28B Bolongo Bay and VI Beach Program monitoring station VI951607 Bolongo Bay. This assessment unit has been listed for Turbidity.

-Frenchman Bay (VI-STT-37) contains DPNR ambient monitoring station STT-29A Frenchman Bay and VI Beach Program monitoring station VI891065 Frenchman’s Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Limetree Bay (VI-STT-38) contains DPNR ambient monitoring station STT-29B Limetree Bay and VI Beach Program monitoring station VI776527 Limetree Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Morningstar Bay (VI-STT-39) contains DPNR ambient monitoring station STT-30 Morningstar Bay and VI Beach Program monitoring station VI937158 Morningstar Bay. This assessment unit has been listed for Enterococci and Turbidity.

-St. Thomas Harbor, Inner (VI-STT-43) contains DPNR ambient monitoring stations STT-31B Hassel Island, Off Navy Dock, STT-31C Hassel Island, Careening Cove, STT-32A Long Bay, Near South Dolphin, STT-32B Long Bay, Northeast Corner, STT-33A Long Bay, Off Outfall, STT-33B Long Bay, Off Outfall, STT-34 Long Bay, Off Pump Station, STT-35 Groden Bay, STT-36 St. Thomas Harbor, North of Coast Guard Dock, STT-37 St. Thomas Harbor, Cay Bay and STT-38 Haulover Cut. This assessment unit has been listed for Turbidity.

-Hassel Island at Haulover Cut to Regis Point (VI-STT-47) contains DPNR ambient monitoring stations STT-2 Crown Bay, Near Tamarind Outlet and STT-3 Subbase. This assessment unit has been listed for Turbidity.

-Druif Bay (VI-STT-49) contains DPNR ambient monitoring station STT-40 Water Isle Hotel Beach. This assessment unit has been listed for Turbidity.

-Flamingo Bay (VI-STT-50) contains DPNR ambient monitoring station STT-41 Water Island Flamingo Bay. This assessment unit has been listed for Turbidity.

-Lindbergh Bay (VI-STT-52) contains DPNR ambient monitoring stations STT-5A Lindbergh Bay East, STT-5B Lindbergh Bay West and VI Beach Program monitoring station VI514102 Lindberg Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Cyril B. King Airport Subwatershed, Offshore (VI-STT-53) contains DPNR ambient monitoring station STT-6C S.W. Road, Near Red Point Outfall. This assessment unit has been listed for Dissolved Oxygen.

-Perseverance Bay, Offshore (VI-STT-54) contains DPNR ambient monitoring station STT-6B College Cove. This assessment unit has been listed for Turbidity.

-Brewers Bay (VI-STT-55) contains DPNR ambient monitoring station STT-7A Brewers Bay and VI Beach Program monitoring station VI293962 Brewer's Bay. This assessment unit has been listed for Dissolved Oxygen and Turbidity.

-Fortuna Bay (VI-STT-57) contains DPNR ambient monitoring stations STT-8 Fortuna Bay. This assessment unit has been listed for Dissolved Oxygen and Enterococci.

The following waterbody/pollutant combinations are new to the 303(d) list and/or have new associated monitoring stations with impairments.

-Sprat Hall Beach (VI-STC-06) contains DPNR ambient monitoring station STC-30 Sprat Hall Beach and VI Beach Program monitoring station VI645288 Sprat Hall. This assessment unit is now also listed for Enterococci.

-Cane Bay (VI-STC-12) contains VI Beach Program monitoring station VI201013 Cane Bay. This assessment unit is now also listed for Phosphorous.

-Salt River Bay (VI-STC-18) contains DPNR ambient monitoring stations STC-33A, B Salt River (Columbus Landing Beach) and VI Beach Program monitoring stations VI146901 Gentle Winds and VI558328 Columbus Landing. This assessment unit is now also listed for Dissolved Oxygen.

-Christiansted Harbor (VI-STC-26) contains DPNR ambient monitoring stations STC-37 Christiansted Harbor Entrance West, STC-40 St. Croix Marine, STC-41 Gallows Bay, STC-42 Public Wharf, STC-43 Water Gut Storm Drain, STC-44 Protestant Cay Beach, STC-46 WAPA Intake, STC-47 Mill Harbor Condominium Beach, and VI Beach

Program monitoring station VI572166 Condo Row (Princess). This assessment unit is now also listed for pH.

-Long Reef Forereef, East (VI-STC-27) contains DPNR ambient monitoring stations STC-35A and STC-36. This assessment unit is now listed for Fecal Coliform.

Christiansted Harbor, east (VI-STC-29) contains DPNR ambient monitoring stations STC-1 Lagoon Recreational Beach, STC-39 Altona Lagoon Inlet and VI Beach Program monitoring station VI213332 New Fort Louise Augusta. This assessment unit is now also listed for pH.

-Beauregard Bay (VI-STC-30) contains DPNR ambient monitoring stations STC-2, STC-38 and VI Beach Program monitoring station VI651587. This assessment unit is now also listed for pH**.**

-Turner Hole Backreef (VI-STC-47) contains VI Beach Program monitoring station VI297470 Grapetree Beach. This assessment unit is now also listed for Fecal Coliform.

-Great Pond Bay (VI-STC-52) contains DPNR ambient monitoring station STC-13A Great Pond Bay. This assessment unit is now also listed for Fecal Coliform.

-Bugby Hole Backreef (VI-STC-56) contains DPNR ambient monitoring stations STC-14A Halfpenny Bay - Manchenil, STC-14B Halfpenny Backreef and VI Beach Program monitoring station VI931289, Halfpenny. This assessment unit is now also listed for Fecal Coliform and pH.

-Canegarden Bay (VI-STC-59) contains DPNR ambient monitoring station STC-15 and STC-15A. This assessment unit is now also listed for Dissolved Oxygen.

-Limetree Bay (VI-STC-62) contains DPNR ambient monitoring station STC-18. This assessment unit is now also listed for Dissolved Oxygen.

-Manning Bay/Estate Anguilla Beach (VI-STC-64) contains DPNR ambient monitoring station STC-23. This assessment unit is now also listed for Dissolved Oxygen.

-HOVENSA West (VI-STC-65) contains DPNR ambient monitoring stations STC-21, and STC-22A. This assessment unit is now also listed for Dissolved Oxygen.

-Good Hope Beach (VI-STC-79) contains DPNR ambient monitoring station STC-26 Good Hope Beach. This assessment unit is now also listed for Dissolved Oxygen.

-Coral Harbor (VI-STJ-13) contains DPNR ambient monitoring stations STJ-53 Coral Bay and STJ-56 Johnson Bay, NPS monitoring stations NPS-15 Coral Bay Dock, NPS-16 Johnson Bay, UVI Supplemental Site and VI Beach Program monitoring stations VI823989 Johnson's Bay. This assessment unit is now also listed for Phosphorous and Dissolved oxygen.

-Great Lameshur Bay (VI-STJ-19) contains DPNR ambient monitoring station UVI Supplemental Site. This assessment unit is now also listed for Phosphorous.

-Fish Bay (VI-STJ-23) contains DPNR ambient monitoring station STJ-48. This assessment unit is now also listed for Phosphorous and Dissolved Oxygen.

-Cruz Bay (VI-STJ-30) contains DPNR ambient monitoring stations STJ-43A, STJ-43B, STJ-43C, STJ-43D, and NPS monitoring stations NPS-28 and NPS-29, and VI Beach Program monitoring station VI309453. This assessment unit is now also listed for Phosphorous.

-Botany Bay (VI-STT-01) contains DPNR ambient monitoring station STT-9. This assessment unit is now also listed for Turbidity.

-Mandahl Bay (Marina) (VI-STT-13) contains DPNR ambient monitoring stations STT-16B, and STT-16C. This assessment unit is now also listed for Turbidity.

-Mandahl Bay Subwatershed, Offshore (VI-STT-17) contains DPNR ambient monitoring stations STT-16A, and STT-18 and VI Beach Program monitoring station VI577932. This assessment unit is now also listed for Enterococci.

-Vessup Bay (VI-STT-23) contains DPNR ambient monitoring station STT-22B. This assessment unit is now also listed for Fecal Coliform and Turbidity.

-Cowpet Bay (VI-STT-28) contains DPNR ambient monitoring stations STT-24, and STT-24A. This assessment unit is now also listed for Turbidity.

-Benner Bay Lagoon Marina (VI-STT-34) contains DPNR ambient monitoring stations STT-27D, and STT-27E. This assessment unit is now also listed for Turbidity and Dissolved Oxygen.

-Mangrove Lagoon (VI-STT-35) contains DPNR ambient monitoring stations STT-27A, STT-27B and STT-27C. This assessment unit is now also listed for Turbidity and Fecal Coliform.

-Frenchman Bay, Subwatershed East (VI-STT-36) contains DPNR ambient monitoring stations STT-28A, STT-28B and VI Beach Program monitoring station VI951607. This assessment unit is now also listed for Phosphorous.

-Frenchman Bay (VI-STT-37) contains DPNR ambient monitoring station STT-29A and VI Beach Program monitoring station VI891065. This assessment unit is now also listed for Enterococci.

-Pacquereau Bay (VI-STT-40) contains DPNR ambient monitoring station STT-31A. This assessment unit is now also listed for Turbidity.

-St. Thomas Harbor, Inner (VI-STT-43) contains DPNR ambient monitoring stations STT-31B, STT-31C, STT-32A, STT-32B, STT-33A, STT-33B, STT-34, STT-35, STT-36, STT-37, and STT-38. This assessment unit is now also listed for Enterococci.

-Gregerie Channel (VI-STT-45) contains DPNR ambient monitoring stations STT-1 and STT-39. This assessment unit is now also listed for Turbidity.

-Sprat Bay (VI-STT-46) contains DPNR ambient monitoring station STT-42. This assessment unit is now also listed for Turbidity.

-Cyril E. King Airport Subwatershed, Offshore (VI-STT-53) contains DPNR ambient monitoring station STT-6C. This assessment unit is now also listed for Turbidity.

IX. HIGH PRIORITY WATERS

In this reporting cycle, DPNR-DEP has prioritized waters based on whether the impairment is likely due to human or physical factors, the size of the assessment unit, and the proximity of impaired assessment units to one another.

High priority assessment units are scheduled for TMDLs to be established in the year listed as follows:

VI-STC-33 Punnett Bay (2018) for Turbidity

- Reason for High Priority: Erosion & Sedimentation from Land Development

VI-STC-35 Tamarind Reef Lagoon (Southgate Lagoon) (2018) for Dissolved Oxygen & Fecal Coliform

- Reason for High Priority: Discharge from Storm Sewers, Resort Areas, developed areas and Marina/Boating activity

VI-STC-36 Green Cay Beach (2018) for Turbidity & Enterococci

- Reason for High Priority: Package sewage plants, Erosion & Sedimentation from Land Development

VI-STC-37 Southgate Subwatershed, Offshore (2018) for Dissolved Oxygen, Enterococci, Fecal Coliform & Turbidity

- Reason for High Priority: NPS pollution, marina/boating activity (maintenance, sewage discharge)

VI-STJ-13 Coral Harbor (2019) for Enterococci, Phosphorous, Dissolved Oxygen, pH & Turbidity

- Reason for High Priority: Vessel activity, Erosion & sedimentation from Land Development

VI-STJ-15 Round Bay (2018) for Enterococci

- Reason for High Priority: Erosion & sedimentation from Land Development

X. MEDIUM PRIORITY WATERS

The following assessment units have been itemized as medium priority assessment units:

VI-STT-32 Jersey Bay, Offshore (2019) for Fecal Coliform

- Reason for Medium Priority: Erosion & sedimentation from Urban areas

VI-STT-34 Benner Bay Lagoon Marina (2019) for Enterococci, Turbidity & Dissolved Oxygen

- Reason for Medium Priority: Changes in Tidal Circulation, discharge from storm sewers, runoff from roads, marina/boating activity, sanitary sewer failures

VI-STT-35 Mangrove Lagoon (2019) for Enterococci, Turbidity, Temperature & Fecal Coliform

- Reason for Medium Priority: Changes in Tidal Circulation, discharge from storm sewers, runoff from roads, marina/boating activity

VI-STT-36 Frenchman Bay Subwatershed East (2020) for Turbidity & Phosphorus

- Reason for Medium Priority: Erosion & sedimentation from Land Development

VI-STT-37 Frenchman Bay (2020) for Enterococci, Turbidity & Dissolved Oxygen

- Reason for Medium Priority: Impacts from Resort Areas (Winter and Non-winter Resorts) &Other Recreational Pollution Sources

VI-STT-38 Limetree Bay (2020) for Dissolved Oxygen and Turbidity

- Reason for Medium Priority: Impacts from decentralized treatment plants & Erosion from derelict land & roads

VI-STT-39 Morningstar Bay (2021) for Enterococci and Turbidity

- Reason for Medium Priority: Impacts from Resort Areas (Winter and Non-winter Resorts) &Other Recreational Pollution Sources

VI-STT-40 Pacquereau Bay (2021) for Turbidity

- Reason for Medium Priority: Erosion & sedimentation from Land Development

VI-STJ-23 Fish Bay (2019) for Dissolved Oxygen, Turbidity, pH, & Phosphorus

- Reason for Medium Priority: Erosion & sedimentation from Land Development

VI-STJ-25 Rendezvous Bay (2019) for Turbidity

- Reason for Medium Priority: Erosion & sedimentation from Land Development

VI-STJ-26 Chocolate Hole (2019) for Dissolved Oxygen, Turbidity & pH

- Reason for Medium Priority: NPS pollution, marina/boating activity (maintenance, sewage discharge)

XI. TMDL SCHEDULE

DPNR-DEP has developed a schedule for completion of TMDLs for several waters on the 2016 303(d) list although not required by EPA regulations. TMDL development for high priority assessment units are detailed under Section IX of this document; while, medium priority assessment units are detailed under Section X above.

Low priority assessment units are listed and/or scheduled as follows:

VI-STC-02 Frederiksted Harbor (2020) for Turbidity & Dissolved Oxygen

VI-STC-04 Prosperity, nearshore (2020) for Turbidity

VI-STC-06 Sprat Hall Beach (2020) for Phosphorous, Turbidity & Dissolved Oxygen,
VI-STC-12 Cane Bay (2021) for Turbidity & Phosphorous

VI-STC-13 Baron Bluff subwatershed (2023) for Enterococci, Turbidity & Dissolved Oxygen

VI-STC-16 Salt River Lagoon, Marina (2019) Enterococci, Turbidity & Fecal Coliform
VI-STC-18 Salt River Bay (2019) for Enterococci, Dissolved Oxygen, Turbidity & Fecal Coliform

VI-STC-23 St. Croix-By-the-Sea (2023) for pH & Turbidity

VI-STC-24 Long Reef Back reef, west (2023) for Enterococci

VI-STC-25 Princess subwatershed, offshore (2023) for Turbidity

VI-STC-26 Christiansted Harbor (2023) for Turbidity

VI-STC-27 Long Reef Forereef, East (2023) for Fecal Coliform

VI-STC-29 Christiansted Harbor, East (2023) for Enterococci, Dissolved Oxygen, Turbidity, pH & Fecal Coliform

VI-STC-30 Beauregard Bay (2023) for pH, Secchi Depth, Turbidity & Fecal Coliform,
VI-STC-31 Buccaneer Beach (2025) for Dissolved Oxygen & Fecal Coliform

VI-STC-39 Teague Bay (2027) for pH, Dissolved Oxygen, Turbidity & Fecal Coliform,
VI-STC-40 Teague Bay Backreef (2027) for pH, Turbidity & Fecal Coliform

VI-STC-41 Buck Island Backreef (2027) for Turbidity

VI-STC-46 Grapetree Bay (2029) for Dissolved Oxygen

VI-STC-47 Turner Hole Backreef (2029) for Enterococci, Turbidity & Fecal Coliform,
VI-STC-52 Great Pond Bay (2031) for Fecal Coliform

VI-STC-56 Bugby Hole Backreef (2031) for Enterococci, pH, Phosphorous, Turbidity & Fecal Coliform

VI-STC-59 Canegarden Bay (2031) for Phosphorous, Turbidity & Fecal Coliform

VI-STC-61 Hess Oil Virgin Islands Harbor (2031) for Enterococci, Temperature, Phosphorous, Turbidity & Dissolved Oxygen

VI-STC-62 Limetree Bay (2031) for Dissolved Oxygen and Fecal Coliform

VI-STC-63 Martin-Marietta Alumina Harbor (2031) Dissolved Oxygen & Phosphorous,
VI-STC-64 Manning Bay/Estate Anguilla Beach (2031) for Fecal Coliform, Phosphorous, Turbidity & Dissolved Oxygen

VI-STC-65 Hovensa, West (2031) for Fecal Coliform, Enterococci, & Dissolved Oxygen

VI-STC-75 Diamond Subwatershed, Offshore (2020) for Enterococci, Secchi Depth, Phosphorous, Toxicity, Turbidity & Dissolved Oxygen

VI-STC-76 Carlton Beach (2020) for Turbidity & Dissolved Oxygen

VI-STC-79 Good Hope Beach (2021) for Enterococci & Dissolved Oxygen

VI-STC-82 Sandy Point, Nearshore West (2021) for Enterococci, Turbidity & Dissolved Oxygen

VI-STJ-01 Caneel Bay (2020) for Turbidity & Dissolved Oxygen

VI-STJ-02 Hawksnest Bay (2020) for Dissolved Oxygen

VI-STJ-03 Trunk Bay (2020) for Dissolved Oxygen

VI-STJ-05 Cinnamon Bay (2020) for Dissolved Oxygen

VI-STJ-06 Maho Bay/Francis Bay (2021) for Turbidity & Dissolved Oxygen

VI-STJ-19 Great Lamshur Bay (2020) for Phosphorous, pH & Turbidity

VI-STJ-21 Genti Bay, nearshore (2020) for Turbidity

VI-STJ-26 Chocolate Hole (2021) for Dissolved Oxygen, pH & Turbidity

VI-STJ-28 Great Cruz Bay (2021) for Dissolved Oxygen, pH & Turbidity

VI-STJ-30 Cruz Bay (2022) for Enterococci, pH, Secchi Depth, Phosphorous, Turbidity & Fecal Coliform

VI-STJ-31 Great Cruz Bay Watershed, Offshore (2022) for Turbidity

VI-STJ-32 Southwest St. John HUC 14, Offshore (2022) for Turbidity

VI-STT-01 Botany Bay (2020) for Turbidity, Enterococci & pH

VI-STT-02 Stumpy Bay (2020) for Turbidity & pH

VI-STT-04 Santa Maria Bay (2019) for Turbidity, Dissolved Oxygen & pH

VI-STT-05 Caret Bay (2022) for Turbidity, Dissolved Oxygen & pH

VI-STT-07 Dorothea (2022) for Turbidity, Dissolved Oxygen & pH

VI-STT-08 Hull Bay (2022) for Turbidity, Dissolved Oxygen & pH

VI-STT-10 Magen's Bay (2022) for Enterococci, Turbidity, Dissolved Oxygen & pH

VI-STT-13 Mandahl Bay (Marina) (2021) for Enterococci, Fecal Coliform, Turbidity, Dissolved Oxygen & pH

VI-STT-15 Sunsi Bay (2021) for Turbidity, Dissolved Oxygen & pH

VI-STT-16 Spring Bay (2023) for Dissolved Oxygen & pH

VI-STT-17 Mandahl Bay Subwatershed, Offshore (2023) for Enterococci, Fecal Coliform, Turbidity, Dissolved Oxygen & pH

VI-STT-18 Water Bay (2024) for Dissolved Oxygen & pH

VI-STT-19 Smith Bay (2024) for Dissolved Oxygen & Turbidity

VI-STT-21 St. John Bay (2024) for Dissolved Oxygen & Turbidity

VI-STT-22 Red Bay (2024) for Dissolved Oxygen, pH & Turbidity

VI-STT-23 Vessup Bay (2024) for Enterococci, Temperature, Turbidity & Fecal Coliform

VI-STT-24 Red Hook Bay (2024) for Turbidity & Enterococci

VI-STT-25 Great Bay (2026) for Dissolved Oxygen & Turbidity

VI-STT-28 Cowpet Bay (2026) for Dissolved Oxygen & Turbidity

VI-STT-31 Nazareth Bay (2026) for Turbidity

VI-STT-43 St. Thomas Harbor, Inner (2030) for Enterococci & Turbidity

VI-STT-45 Gregerie Channel (2030) for Turbidity

VI-STT-46 Sprat Bay (2030) for Turbidity

VI-STT-47 Hassel Island at Haulover Cut to Regis Point (2030) for Turbidity

VI-STT-49 Druif Bay (2030) for Turbidity

VI-STT-50 Flamingo Bay (2030) for Turbidity

VI-STT-51 Krum Bay (2030) for Turbidity

VI-STT-52 Lindbergh Bay (2032) for Turbidity

VI-STT-53 Cyril E. King Airport Subwatershed, Offshore (2032) for Turbidity & Dissolved Oxygen

VI-STT-54 Perseverance Bay, Offshore (2033) for Turbidity & Dissolved Oxygen

VI-STT-55 Brewers Bay (2033) for Turbidity & Dissolved Oxygen

VI-STT-56 Perseverance Bay (2033) for Turbidity & Dissolved Oxygen

VI-STT-57 Fortuna Bay (2033) for Enterococci, Turbidity & Dissolved Oxygen.

Appendix 2: 2016 303(d) List of Impaired Waters

AU ID	AU Name	Associated Monitoring Stations	Priority	Class	Impairment	Years impaired	Tentative Year of TMDL Completion
VI-STC-02	Frederiksted Harbor	STC-29, STC-28, VI970611	Low	C	Dissolved Oxygen	2010, 2012, 2014	2020
VI-STC-02	Frederiksted Harbor	STC-29, STC-28, VI970611	Low	C	Turbidity	2010, 2012, 2014	2020
VI-STC-04	Prosperity, nearshore	VI252619	Low	B	Turbidity	2010, 2014, 2016	2020
VI-STC-06	Sprat Hall Beach	STC-30, VI645288	Low	B	Dissolved Oxygen	2010, 2012, 2014	2020
VI-STC-06	Sprat Hall Beach	STC-30, VI645288	Low	B	Phosphorus	2010, 2012, 2014	2020
VI-STC-06	Sprat Hall Beach	STC-30, VI645288	Low	B	Turbidity	2010, 2012, 2014	2020
VI-STC-06	Sprat Hall Beach	STC-30, VI645288	Low	B	Enterococci	2016	2020
VI-STC-12	Cane Bay	VI201013	Low	B	Turbidity	2010, 2012, 2014, 2016	2020
VI-STC-12	Cane Bay	VI201013	Low	B	Phosphorus	2016	2020
VI-STC-13	Baron Bluff, subwatershed	STC-31, VI398766	Low	B	Dissolved Oxygen	2010, 2012, 2014	2020
VI-STC-13	Baron Bluff, subwatershed	STC-31, VI398766	Low	B	Enterococci	2010, 2012, 2014	2020
VI-STC-13	Baron Bluff, subwatershed	STC-31, VI398766	Low	B	Turbidity	2010, 2012, 2014	2020

VI-STC-16	Salt River Lagoon, Marina	STC-33, STC-33C	Low	B	Enterococci	2010, 2012, 2014	2019
VI-STC-16	Salt River Lagoon, Marina	STC-33, STC-33C	Low	B	Fecal Coliform	2010, 2012, 2014	2019
VI-STC-16	Salt River Lagoon, Marina	STC-33, STC-33C	Low	B	Turbidity	2010, 2012, 2014	2019
VI-STC-18	Salt River Bay	STC-33A, STC-33B, VI146901, VI558328	Low	B	Enterococci	2010, 2012, 2014, 2016	2019
VI-STC-18	Salt River Bay	STC-33A STC-33B VI146901 VI558328	Low	B	Fecal Coliform	2010, 2012, 2014, 2016	2019
VI-STC-18	Salt River Bay	STC-33A STC-33B VI146901 VI558328	Low	B	Turbidity	2010, 2012, 2014, 2016	2019
VI-STC-18	Salt River Bay	STC-33A STC-33B VI146901 VI558328	Low	B	Dissolved Oxygen	2016	2019
VI-STC-23	St. Croix-By-the-Sea	STC-34, VI738082	Low	B	pH	2010, 2012, 2014	2023
VI-STC-23	St. Croix-By-the-Sea	STC-34, VI738082	Low	B	Turbidity	2010, 2012, 2014, 2016	2023
VI-STC-24	Long Reef Backreef, West	STC-48	Low	C	Enterococci	Prior to 2010	2023
VI-STC-26	Christiansted Harbor	STC-37 STC-40 STC-41 STC-42	Low	B	pH	2016	2023

		STC-43 STC-44 STC-45 STC-46 STC-47 STC-49 VI572166					
VI-STC-26	Christiansted Harbor	STC-37 STC-40 STC-41 STC-42 STC-43 STC-44 STC-45 STC-46 STC-47 STC-49 VI572166	Low	B	Turbidity	2010, 2012, 2014, 2016	2023
VI-STC-27	Long Reef Forereef, East	STC-35A, STC-36	Low	B	Fecal Coliform	2016	2023
VI-STC-29	Christiansted Harbor, East	STC-1, STC-39, VI213332	Low	C	Dissolved Oxygen	2010, 2012, 2014	2023
VI-STC-29	Christiansted Harbor, East	STC-1, STC-39, VI213332	Low	C	Enterococci	2010, 2012, 2014	2023
VI-STC-29	Christiansted Harbor, East	STC-1, STC-39, VI213332	Low	C	Fecal Coliform	2010, 2012, 2014, 2016	2023
VI-STC-29	Christiansted Harbor, East	STC-1, STC-39, VI213332	Low	C	Turbidity	2010, 2012, 2014	2023
VI-STC-29	Christiansted Harbor, East	STC-1, STC-39, VI213332	Low	C	pH	2016	2023
VI-STC-30	Beauregard Bay	STC-2, STC-38, VI651587	Low	B	Fecal Coliform	2010, 2012, 2014	2023

VI-STC-30	Beauregard Bay	STC-2, STC-38, VI651587	Low	B	Secchi Depth	2010, 2012, 2014	2023
VI-STC-30	Beauregard Bay	STC-2, STC-38, VI651587	Low	B	Turbidity	2010, 2012, 2014	2023
VI-STC-30	Beauregard Bay	STC-2, STC-38, VI651587	Low	B	pH	2016	2023
VI-STC-31	Buccaneer Beach	STC-3	Low	B	Dissolved Oxygen	2010, 2014	2025
VI-STC-31	Buccaneer Beach	STC-3	Low	B	Fecal Coliform	2010, 2014	2025
VI-STC-33	Punnett Bay	VI610321	High	B	Turbidity	2010, 2012, 2014, 2016	2018
VI-STC-35	Tamarind Reef Lagoon (Southgate Lagoon)	STC-4	High	B	Fecal Coliform	Prior to 2010	2018
VI-STC-36	Green Cay Beach	VI563397	High	B	Enterococci	2010, 2012, 2014	2018
VI-STC-36	Green Cay Beach	VI563397	High	B	Turbidity	2010, 2012, 2014, 2016	2018
VI-STC-37	Southgate Subwatershed, Offshore	STC-5	High	B	Dissolved Oxygen	2010, 2014, 2016	2018
VI-STC-37	Southgate Subwatershed, Offshore	STC-5	High	B	Enterococci	2010, 2014, 2016	2018
VI-STC-37	Southgate Subwatershed, Offshore	STC-5	High	B	Fecal Coliform	2010, 2014	2018
VI-STC-37	Southgate Subwatershed,	STC-5	High	B	Turbidity	2010, 2014, 2016	2018

	Offshore						
VI-STC-39	Teague Bay	STC-8, STC-9, VI381319, UVI-Supp	Low	B	Dissolved Oxygen	2010, 2012, 2014	2027
VI-STC-39	Teague Bay	STC-8, STC-9, VI381319, UVI-Supp	Low	B	Fecal Coliform	2010, 2012, 2014, 2016	2027
VI-STC-39	Teague Bay	STC-8, STC-9, VI381319, UVI-Supp	Low	B	pH	2010, 2012, 2014	2027
VI-STC-39	Teague Bay	STC-8, STC-9, VI381319, UVI-Supp	Low	B	Turbidity	2010, 2012, 2014	2027
VI-STC-40	Teague Bay Backreef	STC-10, VI351774	Low	B	Fecal Coliform	2010, 2012, 2014	2027
VI-STC-40	Teague Bay Backreef	STC-10, VI351774	Low	B	pH	2010, 2012, 2014	2027
VI-STC-40	Teague Bay Backreef	STC-10, VI351774	Low	B	Turbidity	2010, 2012, 2014, 2016	2027
VI-STC-46	Grapetree Bay	STC-11B	Low	B	Dissolved Oxygen	Prior to 2010, 2014	2029
VI-STC-47	Turner Hole Backreef	VI297470	Low	B	Enterococci	2010, 2012, 2014, 2016	2029
VI-STC-47	Turner Hole Backreef	VI297470	Low	B	Turbidity	2010, 2012, 2014, 2016	2029
VI-STC-47	Turner Hole Backreef	VI297470	Low	B	Fecal Coliform	2016	2029
VI-STC-52	Great Pond Bay	STC-13A	Low	B	Fecal Coliform	2016	2029

VI-STC-56	Bugby Hole Backreef	STC-14A, STC-14B, VI931289	Low	B	Enterococci	2010, 2012, 2014	2031
VI-STC-56	Bugby Hole Backreef	STC-14A, STC-14B, VI931289	Low	B	Phosphorus	2010, 2012, 2014	2031
VI-STC-56	Bugby Hole Backreef	STC-14A, STC-14B, VI931289	Low	B	Turbidity	2010, 2012, 2014, 2016	2031
VI-STC-56	Bugby Hole Backreef	STC-14A, STC-14B, VI931289	Low	B	Fecal Coliform	2016	2031
VI-STC-56	Bugby Hole Backreef	STC-14A, STC-14B, VI931289	Low	B	pH	2016	2031
VI-STC-59	Canegarden Bay	STC-15, STC-15A	Low	B	Phosphorus	2010, 2014	2031
VI-STC-59	Canegarden Bay	STC-15, STC-15A	Low	B	Turbidity	2010, 2014	2031
VI-STC-59	Canegarden Bay	STC-15, STC-15A	Low	B	Dissolved Oxygen	2016	2031
VI-STC-61	Hess Oil Virgin Islands Harbor	STC-16, STC-17	Low	C	Dissolved Oxygen	2010, 2014	2031
VI-STC-61	Hess Oil Virgin Islands Harbor	STC-16, STC-17	Low	C	Enterococci	2010, 2014	2031
VI-STC-61	Hess Oil Virgin Islands Harbor	STC-16, STC-17	Low	C	Phosphorus	2010, 2014	2031
VI-STC-61	Hess Oil Virgin Islands Harbor	STC-16, STC-17	Low	C	Temperature	2010, 2014	2031

VI-STC-61	Hess Oil Virgin Islands Harbor	STC-16, STC-17	Low	C	Turbidity	2010, 2014	2031
VI-STC-62	Limetree Bay	STC-18	Low	B	Fecal Coliform	Prior to 2010	2031
VI-STC-62	Limetree Bay	STC-18	Low	B	Dissolved Oxygen	2016	2031
VI-STC-63	Martin-Marietta Alumina Harbor	STC-19, STC-20	Low	C	Dissolved Oxygen	Prior to 2010, 2016	2031
VI-STC-64	Manning Bay/Estate Anguilla Beach	STC-23	Low	B	Fecal Coliform	2010, 2014	2031
VI-STC-64	Manning Bay/Estate Anguilla Beach	STC-23	Low	B	Phosphorus	2010, 2014	2031
VI-STC-64	Manning Bay/Estate Anguilla Beach	STC-23	Low	B	Turbidity	2010, 2014	2031
VI-STC-64	Manning Bay/Estate Anguilla Beach	STC-23	Low	B	Dissolved Oxygen	2016	2031
VI-STC-65	HOVENSA West	STC-21, STC-22A	Low	B	Enterococci	Prior to 2010	2031
VI-STC-65	HOVENSA West	STC-21, STC-22A	Low	B	Fecal Coliform	Prior to 2010, 2016	2031
VI-STC-65	HOVENSA West	STC-21, STC-22A	Low	B	Dissolved Oxygen	2016	2031
VI-STC-75	Diamond Subwatershed, Offshore	STC-24B	Low	B	Dissolved Oxygen	2010, 2014, 2016	2020
VI-STC-75	Diamond Subwatershed,	STC-24B	Low	B	Enterococci	2010, 2014	2020

	Offshore						
VI-STC-75	Diamond Subwatershed, Offshore	STC-24B	Low	B	Phosphorus	2010, 2014	2020
VI-STC-75	Diamond Subwatershed, Offshore	STC-24B	Low	B	Secchi Depth	2010, 2014	2020
VI-STC-75	Diamond Subwatershed, Offshore	STC-24B	Low	B	Toxicity	2010, 2014	2020
VI-STC-75	Diamond Subwatershed, Offshore	STC-24B	Low	B	Turbidity	2010, 2014	2020
VI-STC-76	Carlton Beach	STC-25	Low	B	Dissolved Oxygen	Prior to 2010, 2014, 2016	2020
VI-STC-76	Carlton Beach	STC-25	Low	B	Turbidity	Prior to 2010, 2014	2020
VI-STC-79	Good Hope Beach	STC-26	Low	B	Enterococci	2010, 2012, 2014	2020
VI-STC-79	Good Hope Beach	STC-26	Low	B	Dissolved Oxygen	2016	2020
VI-STC-82	Sandy Point, Nearshore West	STC-27, VI896490, VI907985	Low	B	Dissolved Oxygen	2010, 2012, 2014	2021
VI-STC-82	Sandy Point, Nearshore West	STC-27, VI896490, VI907985	Low	B	Enterococci	2010, 2012, 2014	2021

VI-STC-82	Sandy Point, Nearshore West	STC-27, VI896490, VI907985	Low	B	Turbidity	2010, 2012, 2014	2021
VI-STJ-01	Caneel Bay	STJ-54, NPS-1, VI658467	Low	B	Dissolved Oxygen	Prior to 2010	2018
VI-STJ-01	Caneel Bay	STJ-54, NPS-1, VI658467	Low	B	Turbidity	Prior to 2010	2018
VI-STJ-02	Hawksnest Bay	STJ-44B, NPS-3, NPS-4, VI255380	Low	B	Dissolved Oxygen	2010, 2012	2018
VI-STJ-03	Trunk Bay	STJ-44A, NPS-5	Low	A	Dissolved Oxygen	Prior to 2010	2018
VI-STJ-05	Cinnamon Bay	STJ-44C, NPS-6, NPS-7	Low	B	Dissolved Oxygen	Prior to 2010	2018
VI-STJ-06	Maho Bay/Francis Bay	STJ-44D, NPS-8, NPS-9, VI536165	Low	B	Dissolved Oxygen	2010	2021
VI-STJ-06	Maho Bay/Francis Bay	STJ-44D, NPS-8, NPS-9, VI536165	Low	B	Turbidity	2010	2021
VI-STJ-13	Coral Harbor	STJ-53, STJ-56, NPS-15, NPS-16, VI823989, UVI-Supp	High	B	Enterococci	2010, 2012, 2014	2019

VI-STJ-13	Coral Harbor	STJ-53, STJ-56, NPS-15, NPS-16, VI823989, UVI-Supp	High	B	pH	2010, 2012, 2014	2019
VI-STJ-13	Coral Harbor	STJ-53, STJ-56, NPS-15, NPS-16, VI823989, UVI-Supp	High	B	Turbidity	2010, 2012, 2014, 2016	2019
VI-STJ-13	Coral Harbor	STJ-53, STJ-56, NPS-15, NPS-16, VI823989, UVI-Supp	High	B	Phosphorus	2016	2019
VI-STJ-13	Coral Harbor	STJ-53, STJ-56, NPS-15, NPS-16, VI823989, UVI-Supp	High	B	Dissolved Oxygen	2016	2019
VI-STJ-15	Round Bay	STJ-57, NPS-22, UVI-Supp	High	B	Enterococci	2012	2018
VI-STJ-19	Great Lameshur Bay	STJ-50, STJ-51, UVI-Supp	Medium	B	pH	2014	2020
VI-STJ-19	Great Lameshur Bay	STJ-50, STJ-51, UVI-Supp	Medium	B	Turbidity	2014	2020
VI-STJ-19	Great Lameshur Bay	STJ-50, STJ-51, UVI-Supp	Medium	B	Phosphorus	2016	2020
VI-STJ-21	Genti Bay, nearshore	STJ-49, UVI-Supp	Medium	B	Turbidity	2014	2020

VI-STJ-23	Fish Bay	STJ-48	Medium	B	pH	2010	2019
VI-STJ-23	Fish Bay	STJ-48	Medium	B	Turbidity	2010, 2016	2019
VI-STJ-23	Fish Bay	STJ-48	Medium	B	Phosphorus	2016	2019
VI-STJ-23	Fish Bay	STJ-48	Medium	B	Dissolved Oxygen	2016	2019
VI-STJ-25	Rendezvous Bay	STJ-47, NPS-23, VI204627, VI402599	Medium	B	Fecal Coliform	2010, 2012, 2016	2019
VI-STJ-25	Rendezvous Bay	STJ-47, NPS-23, VI204627, VI402599	Medium	B	Turbidity	2010, 2012, 2016	2019
VI-STJ-26	Chocolate Hole	STJ-46, NPS-24, VI391298	Low	B	Dissolved Oxygen	2010, 2012	2019
VI-STJ-28	Great Cruz Bay	STJ-45, NPS-25, VI779192	Low	B	Dissolved Oxygen	2010, 2012, 2014	2021
VI-STJ-28	Great Cruz Bay	STJ-45, NPS-25, VI779192	Low	B	pH	2010, 2012, 2014	2021
VI-STJ-28	Great Cruz Bay	STJ-45, NPS-25, VI779192	Low	B	Turbidity	2010, 2012, 2014, 2016	2021
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	Dissolved Oxygen	2012, 2014	2022
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C,	Low	B	Enterococci	2012, 2014	2022

		STJ-43D, NPS-27, NPS-28, NPS-29, VI309453					
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	Fecal Coliform	2012, 2014	2022
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	pH	2012, 2014	2022
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	Secchi Depth	2012, 2014	2022
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	Turbidity	2012, 2014, 2016	2022
VI-STJ-30	Cruz Bay	STJ-43A, STJ-43B, STJ-43C, STJ-43D, NPS-27, NPS-28, NPS-29, VI309453	Low	B	Phosphorus	2016	2022

VI-STJ-31	Great Cruz Bay Watershed, Offshore	VI456779	Low	B	Turbidity	Prior to 2010	2022
VI-STJ-32	Southwest St. John HUC 14, Offshore	STJ-OFF4	Low	B	Turbidity	2014	2022
VI-STT-01	Botany Bay	STT-9	Low	B	Enterococci	2010	2020
VI-STT-01	Botany Bay	STT-9	Low	B	Turbidity	2016	2020
VI-STT-02	Stumpy Bay	STT-10	Low	B	Turbidity	Prior to 2010, 2016	2020
VI-STT-04	Santa Maria Bay	STT-11	Low	B	Dissolved Oxygen	2010	2019
VI-STT-04	Santa Maria Bay	STT-11	Low	B	Turbidity	2010, 2016	2019
VI-STT-05	Caret Bay	STT-12	Low	B	Dissolved Oxygen	Prior to 2010	2022
VI-STT-05	Caret Bay	STT-12	Low	B	Turbidity	Prior to 2010, 2016	2022
VI-STT-07	Dorothea	STT-13	Low	B	Dissolved Oxygen	2010, 2012	2022
VI-STT-07	Dorothea	STT-13	Low	B	Turbidity	2010, 2012, 2016	2022
VI-STT-08	Hull Bay	STT-14, VI616865	Low	B	Dissolved Oxygen	2010, 2012, 2014	2022
VI-STT-08	Hull Bay	STT-14, VI616865	Low	B	pH	2010, 2012, 2014	2022
VI-STT-08	Hull Bay	STT-14, VI616865	Low	B	Turbidity	2010, 2012, 2014, 2016	2022
VI-STT-10	Magen's Bay	STT-15, STT-15A, STT-15B, VI672756	Low	B	Dissolved Oxygen	2010, 2012, 2014	2022

VI-STT-10	Magen's Bay	STT-15, STT-15A, STT-15B, VI672756	Low	B	Enterococci	2010, 2012, 2014	2022
VI-STT-10	Magen's Bay	STT-15, STT-15A, STT-15B, VI672756	Low	B	pH	2010, 2012, 2014	2022
VI-STT-10	Magen's Bay	STT-15, STT-15A, STT-15B, VI672756	Low	B	Turbidity	2010, 2012, 2014, 2016	2022
VI-STT-13	Mandahl Bay (Marina)	STT-16B, STT-16C	Low	B	Dissolved Oxygen	2010, 2012, 2014, 2016	2021
VI-STT-13	Mandahl Bay (Marina)	STT-16B, STT-16C	Low	B	Enterococci	2010, 2012, 2014	2021
VI-STT-13	Mandahl Bay (Marina)	STT-16B, STT-16C	Low	B	Fecal Coliform	2010, 2012, 2014	2021
VI-STT-13	Mandahl Bay (Marina)	STT-16B, STT-16C	Low	B	pH	2010, 2012, 2014	2021
VI-STT-13	Mandahl Bay (Marina)	STT-16B, STT-16C	Low	B	Turbidity	2016	2021
VI-STT-15	Sunsi Bay	STT-17B	Low	B	Dissolved Oxygen	2010, 2012	2021
VI-STT-16	Spring Bay	STT-17A	Low	B	Dissolved Oxygen	Prior to 2010	2023
VI-STT-17	Mandahl Bay Subwatershed, Offshore	STT-16A, STT-18, VI577932	Low	B	Dissolved Oxygen	2010, 2012	2023

VI-STT-17	Mandahl Bay Subwatershed, Offshore	STT-16A, STT-18, VI577932	Low	B	Fecal Coliform	2010, 2012	2023
VI-STT-17	Mandahl Bay Subwatershed, Offshore	STT-16A, STT-18, VI577932	Low	B	Turbidity	2010, 2012, 2016	2023
VI-STT-17	Mandahl Bay Subwatershed, Offshore	STT-16A, STT-18, VI577932	Low	B	Enterococci	2016	2023
VI-STT-18	Water Bay	STT-19, VI591668	Low	B	Dissolved Oxygen	2010, 2012, 2014	2024
VI-STT-18	Water Bay	STT-19, VI591668	Low	B	pH	2010, 2012, 2014	2024
VI-STT-19	Smith Bay	STT-20, VI431925	Low	B	Dissolved Oxygen	2010, 2012, 2014	2024
VI-STT-19	Smith Bay	STT-20, VI431925	Low	B	Turbidity	2010, 2012, 2014	2024
VI-STT-21	St. John Bay	STT-21A, VI327776	Low	B	Dissolved Oxygen	2010, 2012, 2014	2024
VI-STT-21	St. John Bay	STT-21A, VI327776	Low	B	Turbidity	2010, 2012, 2014	2024
VI-STT-22	Red Bay	STT-21B	Low	B	Dissolved Oxygen	Prior to 2010, 2016	2024
VI-STT-22	Red Bay	STT-21B	Low	B	Turbidity	Prior to 2010, 2016	2024
VI-STT-23	Vessup Bay	STT-22B	Low	B	Enterococci	2010, 2012, 2014	2024

VI-STT-23	Vessup Bay	STT-22B	Low	B	Temperature	2010, 2012, 2014	2024
VI-STT-23	Vessup Bay	STT-22B	Low	B	Fecal Coliform	2016	2024
VI-STT-23	Vessup Bay	STT-22B	Low	B	Turbidity	2016	2024
VI-STT-24	Red Hook Bay	STT-22A VI1764950	Low	B	Turbidity	2010, 2012, 2016	2024
VI-STT-25	Great Bay	STT-23, VI505006	Low	B	Dissolved Oxygen	2010, 2012, 2014	2026
VI-STT-25	Great Bay	STT-23, VI505006	Low	B	Turbidity	2010, 2012, 2014, 2016	2026
VI-STT-28	Cowpet Bay	STT-24, STT-24A	Low	B	Dissolved Oxygen	Prior to 2010	2026
VI-STT-28	Cowpet Bay	STT-24, STT-24A	Low	B	Turbidity	2016	2026
VI-STT-31	Nazareth Bay	VI389422	Low	B	Turbidity	2010, 2012, 2014, 2016	2026
VI-STT-32	Jersey Bay, Offshore	STT-25	Medium	B	Fecal Coliform	Prior to 2010	2019
VI-STT-34	Benner Bay Lagoon Marina	STT-27D STT-27E	Medium	B	Enterococci	2010, 2012, 2014	2019
VI-STT-34	Benner Bay Lagoon Marina	STT-27D STT-27E	Medium	B	Turbidity	2016	2019
VI-STT-34	Benner Bay Lagoon Marina	STT-27D STT-27E	Medium	B	Dissolved Oxygen	2016	2019
VI-STT-35	Mangrove Lagoon	STT-27A STT-27B STT-27C	Medium	B	Enterococci	2010, 2012, 2014	2019

VI-STT-35	Mangrove Lagoon	STT-27A STT-27B STT-27C	Medium	B	Temperature	2010, 2012, 2014	2019
VI-STT-35	Mangrove Lagoon	STT-27A STT-27B STT-27C	Medium	B	Turbidity	2016	2019
VI-STT-35	Mangrove Lagoon	STT-27A STT-27B STT-27C	Medium	B	Fecal Coliform	2016	2019
VI-STT-36	Frenchman Bay Subwatershed East	STT-28A, STT-28B, VI951607	Medium	B	Turbidity	2010, 2012, 2016	2020
VI-STT-36	Frenchman Bay Subwatershed East	STT-28A, STT-28B, VI951607	Medium	B	Phosphorus	2016	2020
VI-STT-37	Frenchman Bay	STT-29A, VI891065	Medium	B	Dissolved Oxygen	2010, 2012, 2014	2020
VI-STT-37	Frenchman Bay	STT-29A, VI891065	Medium	B	Turbidity	2010, 2012, 2014, 2016	2020
VI-STT-37	Frenchman Bay	STT-29A, VI891065	Medium	B	Enterococci	2016	2020
VI-STT-38	Limetree Bay	STT-29B, VI776527	Medium	B	Dissolved Oxygen	2010, 2012	2020
VI-STT-38	Limetree Bay	STT-29B, VI776527	Medium	B	Turbidity	2010, 2012, 2016	2020
VI-STT-39	Morningstar Bay	STT-30, VI937158	Medium	B	Enterococci	2010, 2012	2021
VI-STT-39	Morningstar Bay	STT-30, VI937158	Medium	B	Turbidity	2010, 2012, 2016	2021

VI-STT-40	Pacquereau Bay	STT-31A	Medium	B	Turbidity	2016	2021
VI-STT-43	St. Thomas Harbor, Inner	STT-31B, STT-31C, STT-32A, STT-32B, STT-33A, STT-33B, STT-34, STT-35, STT-36, STT-37, STT-38	Low	C	Turbidity	2010, 2012, 2014	2030
VI-STT-43	St. Thomas Harbor, Inner	STT-31B, STT-31C, STT-32A, STT-32B, STT-33A, STT-33B, STT-34, STT-35, STT-36, STT-37, STT-38	Low	C	Enterococci	2016	2030
VI-STT-45	Gregerie Channel	STT-1, STT-39	Low	B	Turbidity	2016	2030
VI-STT-46	Sprat Bay	STT-42	Low	B	Turbidity	2016	2030
VI-STT-47	Hassel Island at Haulover Cut to Regis Point	STT-2, STT-3	Low	C	Turbidity	2010, 2014	2030
VI-STT-49	Druif Bay	STT-40	Low	B	Turbidity	Prior to 2010, 2016	2030
VI-STT-50	Flamingo Bay	STT-41	Low	B	Turbidity	2010, 2016	2030
VI-STT-52	Lindbergh Bay	STT-5A, STT-5B, VI514102	Low	B	Dissolved Oxygen	2010, 2012, 2014	2032
VI-STT-52	Lindbergh Bay	STT-5A, STT-5B, VI514102	Low	B	Turbidity	2010, 2012, 2014, 2016	2032

VI-STT-53	Cyril E. King Airport Subwatershed, Offshore	STT-6C	Low	B	Dissolved Oxygen	Prior to 2010	2032
VI-STT-53	Cyril E. King Airport Subwatershed, Offshore	STT-6C	Low	B	Turbidity	2016	2032
VI-STT-54	Perseverance Bay, Offshore	STT-6B	Low	B	Turbidity	2010, 2012, 2016	2033
VI-STT-55	Brewers Bay	STT-7A VI293962	Low	B	Dissolved Oxygen	2010, 2012, 2014	2033
VI-STT-55	Brewers Bay	STT-7A VI293962	Low	B	Turbidity	2010, 2012, 2014, 2016	2033
VI-STT-57	Fortuna Bay	STT-8	Low	B	Dissolved Oxygen	2010	2033
VI-STT-57	Fortuna Bay	STT-8	Low	B	Enterococci	2010	2033

Appendix 3: 2016 Responsiveness Summary for US Virgin Islands Assessment Methodology

Responsiveness Summary

2016 US Virgin Islands
Assessment Methodology

February 2016

Prepared By:

Department of Planning & Natural Resources
Division of Environmental Protection

I. Introduction

The Virgin Islands Department of Planning and Natural Resources (DPNR) Division of Environmental Protection (DEP) has prepared this report to summarize and respond to the comments received on the public noticed draft of the US Virgin Islands 2016 Assessment Methodology document (AM document).

Comments were only received from the United States Environmental Protection Agency Region 2 (EPA) staff during the 30-day public notice period. The public comment period began on January 12, 2016 and ended on February 11, 2016. The public comment period was published on the VIDPNR website and VIALERT website. The public notice was available on the following URL: https://login.vialert.gov/Public/News/AllHazPRView.aspx?notID=3385348&refer=HOME&source=WEB&messageID=AghxO4T6A&. Additionally, the public notice was posted on the DPNR-DEP website at the following link:
http://dpnr.vi.gov/environmental-protection/public-notices/

II. Comments

During the public comment period, DPNR only received comments from the United States Environmental Protection Agency. Below is a summary of the comments received by DPNR and DPNR's responses to those comments:

Comments received on the Draft List of Impaired Waters and Narrative

Number	Comment	Response
1.	***Page 5: Class "A" Waters*** EPA would also like DPNR to consider adding the following language to Section 2.2 (page 5) after "In no case shall Class B water quality standards be exceeded." *"Assessing Class A Waters When Insufficient Data Exits to Determine Natural Conditions in the Class A Water* *Currently there is insufficient information to determine natural conditions in Class A waters. The phrase "In no case shall Class B Water Quality Standards be exceeded" within the narrative water quality criteria for Class A waters is interpreted to mean that until sufficient data is available to determine natural conditions in Class A waters, in no case shall Class B numeric water quality criteria be exceeded in Class A waters. Data continues to be collected to determine natural conditions in Class A waters. Until such time as natural conditions are determined for a particular Class A water: (1) if data indicate that all Class B numeric water quality criteria are not exceeded in a Class A water, that Class A water will be placed into Category 3 for insufficient information to determine attainment status; and (2) if data indicate that any Class B numeric water quality*	DPNR agrees with this statement, and added the language as suggested.

	criteria are exceeded in a Class A water, that Class A water will be placed into Category 5 as impaired for the pollutant(s) causing the exceedance(s).”	
2.	***Page 6: 2.3 Monitored Waters*** There are a total of 48 monitored waters that fall under each class but in the far right column there are only 47 AU’s monitored. Is this a mistake?	This was not a mistake. One AU contains both Class B and C waters, so was counted once for Class B and once for Class C. However, the AU will be considered Class B waters as a whole, as the WQS are more stringent in Class B waters.
3.	***Page 6: 2.3 Monitored Waters*** Can DPNR list how many of these unmonitored AU’s have monitoring sites within them but were not monitored this cycle?	A list of these AUs has been added in the following section, 2.4 Unmonitored Waters.
4.	***Page 6: 2.4 Unmonitored Waters*** Can DPNR put a timeline for when we expect a new strategy to assess the unmonitored waters will be available. Maybe by the 2018 Integrated report?	Added timeline to implement by 2020 IR.
5.	***Page 12: 3.1.2 Evaluation of External Data*** EPA comments on the 2014 IR referenced several sources of data that were not used in that IR but, after appropriate consultation with EPA assessment staff, could be used for the next IR (even if slightly outside the	NOAA was contacted but didn’t offer this data during the data solicitation public notice. An Appendix A was added as requested for list of those contacted directly during the data solicitation public notice period

	evaluation period)	via letter, which includes NOAA.
6.	***Page 12: 3.1.2 Evaluation of External Data*** Can DPNR put a timeline for when we expect a new SOP for the evaluation of secondary data will be available. Maybe by the 2018 Integrated report?	Added timeline to implement by 2020 IR.
7.	***Page 13: 3.4 Identify exceedances of water quality standards*** Both Ambient and Entero should be assessed as "Shall not exceed the 30 day geometric mean of 30 CFU/100mL and no more than 10 percent of the samples collected in the same 30 days shall exceed 110 CFU/100mL.	At the time of the development of this AM document and the associated 303(d) list, the 2015 WQS have not yet been fully approved by EPA, so DPNR is using the 2010 WQS criteria for assessment.
8.	***Page 13: 3.4 Identify exceedances of water quality standards*** Can you define here which types of turbidity (clarity) data are being used: laboratory-generated, multi-parameter sonde, and/or secchi disk reading?	DPNR has provided clarification as requested.
9.	***Page 14:Future Assessment Methodologies to be Included*** Can DPNR outline tentative timeframes for the completion of each of these tasks, for example, wetland assessment data (2018)?	References to the 2015 USVI MYMS are added, which provide further details on timeframes.

10.	***Page 16: 3.8 Listing Rules: Minimum number of samples*** In reference to the second sentence under this section: Should this be Or not and? DPNR isn't saying that if one or more weekly beach monitoring/sample are missed that a water will not be listed, right?	To clarify, this sentence has been removed. The first sentence is sufficient to explain the minimum number of samples needed by DPNR to properly assess a waterbody.
11.	***Page 16: 4.0 Designated Use Attainment*** Can DPNR put a timeline for when we expect a contractor to be able to develop a new waterbody delineation for VI? Maybe by the 2018 Integrated report?	Added timeline to implement by 2020 IR.
12.	***Page18: 4.2.1 Microbiological Assessment*** Various edits to Class B criteria from 2010 WQS to 2015 WQS	As noted above in Comment 7: At the time of the development of this AM document and the associated 303(d) list, the 2015 WQS have not yet been fully approved by EPA, so DPNR is using the 2010 WQS criteria for assessment.
13.	***Page 19: 4.2.2 Beach Closure Assessment*** Can you explain what you mean by "enforced?"	Clarification was added that DPNR-DEP-WQM cannot restrict beach access. However, VI Dept. of Health or VI Waste Management Authority can, and do so using enforcement officials during serious threats to human health.
14.	***Page 19: 4.2.2 Beach Closure Assessment*** Can you clarify if Beach sample are taken once or twice a week?	Clarification was added as follows: *"Beaches which are listed as not suitable for fishing or swimming in the weekly Beach Program have had samples collected which exceed the standard within that*

		monitoring week. Those beaches that are re-sampled according to the BEACH QAPP and exceed the standard twice within that monitoring week shall be listed as well. The raw data collected by the Beach Program at the program's 43 designated beached are used to calculate the geometric mean for each designated beach on a quarterly basis, and that data is used in assessment."
15.	***Page 20: 4.3.1 Toxicant Assessment (Aquatic Life) / Toxicity Assessment*** Did DPNR ever define slight or infrequent? In reference to the Not Supporting condition: This is confusing. Many tests? Or not supporting when violating listing targeting sample size of 2 exceedances over 8 quarters or 2 years of data?	Added specific clarification of each condition for use support, as follows: *1. Fully Supporting: No toxicants or toxicity noted in either acute or chronic tests compared to controls or reference conditions.* *2. Partially Supporting: No toxicants or toxicity noted in acute tests, but may be present in chronic tests less than two (2) times within the minimum data set.* *3. Not Supporting: Toxicants or toxicity noted in two (2) or more tests within the minimum data set.*

16.	***Page 20: 4.3.2 Habitat Assessment*** Comments on definition of "slight to moderate", "some", "moderate to severe", "heavy": How will DPNR determine this?	These will be defined and/or quantified as a result future meetings to address habitat assessment and the current data gaps.
17.	***Page 21: 4.3.3 Conventional Assessment:*** In reference to the second sentence: This is confusing and should stick with what DPNR has outlined as the minimum number of exceedances needed to determine an impairment is in place.	This sentence was removed and replaced with the following: A waterbody is determined to be impaired if there is an exceedance of a specific parameter two (2) or more times within the minimum data set of 8 quarters.
18.	***Page 21: 4.3.3 Conventional Assessment*** Could DPNR put the Turbidity and pH criteria here to stay consistent with the listing of criteria of DO and temperature above?	Criteria added.

19.	***Page 21: 4.3.3 Conventional Assessment*** In reference to the "natural condition" note: So far, the issue is not being considered for the 2018 triennial WQS review. If DPNR is willing to address this issue, as stated, it will need to be added to the final draft for the 2018 VIWQSR and can you put here that this will be addressed in the 2018 VI Water Quality Standards triennial review?	It was set as a future review, not 2018 to be realistic about the timeline. DPNR hopes to address it for the 2018 WQS review, but can't commit at this time as a certainty.
20.	***Page 21: 4.3.4 Biological Assessment*** Comments on definition of "modified significantly ", "the natural range ", "moderate modification ", "At least one assemblage indicates non-support": How will DPNR determine this?	These will be defined and/or quantified as a result future meetings to address biological assessment and the current data gaps.
21.	***Page 22: Listing Categories- Category 3 & Category 3B*** Unless it is determined that the less than 8 quarters of data obtained is accurately characterizing the waterbody and the listing or delisting determinations will be made on a best professional judgement basis and will be noted in the narrative portion of the integrated report.	DPNR agrees and corrected this from four quarters to eight quarters.

Appendix 4: 2016 Responsiveness Summary for US Virgin Islands 303(d) List of Impaired Waterbodies & Narrative Document

Responsiveness Summary

2016 US Virgin Islands

303(d) List

April 2016

Prepared By:

Department of Planning & Natural Resources

Division of Environmental Protection

III. Introduction

The Virgin Islands Department of Planning and Natural Resources (DPNR) Division of Environmental Protection (DEP) has prepared this report to summarize and respond to the comments received on the public noticed draft of the US Virgin Islands 2016 303(d) list and List Narrative.

Comments were received from the United States Environmental Protection Agency Region 2 (EPA) staff as well as one citizen during the 30-day public notice period. The public comment period began on March 16, 2016 and ended on April 15, 2016. The public comment period was published on the VIDPNR website and St. Croix Source. The public notice was posted on the DPNR-DEP website at the following link: http://dpnr.vi.gov/environmental-protection/public-notices/

IV. Comments

During the public comment period, DPNR received comments from the United States Environmental Protection Agency as well as one citizen. Below is a summary of the comments received by DPNR and DPNR's responses to those comments:

EPA Comments received on the Draft List of Impaired Waters and Narrative

Number	Comment	Response
13.	***Page 2*** Please consider changing the sentence to: Identify waters targeted **for** TMDL development over the next two (2) years.	DPNR changed the language as suggested.

14.	***Page 2*** Please consider changing the sentence to: This 2016 submission, required under Section 303(d)(1)(A) of the Clean Water Act, **requires submission of a biennial list of water quality-limited waters, which identifies waters that are not supporting designated uses because they do not meet surface water quality standards despite the implementation of technology-based effluent limits.**	DPNR changed the language as suggested.
15.	***Page 6*** Please consider changing the sentence to: Insufficient data is defined as data collected for less than **eight** quarters during 2 year-period.	DPNR changed the language as suggested.
16.	***Page 6*** Please consider changing the sentence to: The Virgin Islands considers data to be insufficient if it was collected during less than **eight** quarters within a 2 year-period.	DPNR changed the language as suggested.
17.	***Page 7*** Please consider changing the Category 4B first sentence to: **The waterbody/pollutant combination is placed into this category only if there are other pollution control requirements sufficiently stringent enough to achieve applicable water quality standards within a reasonable period of time.**	DPNR changed the language as suggested.

18.	***Page 7*** Please consider changing the Category 4C paragraph to: **<u>The waterbody/pollutant combination is placed into this category when it is demonstrated that the failure to meet an applicable water quality standard is not caused by a pollutant, but instead is caused by other types of pollution. Waterbody/pollutant combinations placed in Category 4C do not require the development of a TMDL. Pollution as defined by the CWA is “the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.” A designated Category 4C waterbody/pollutant combination will continue to be monitored to confirm that there are no pollutants associated with the failure to meet the water quality standard.</u>**	DPNR changed the language as suggested.
19.	***Page 8*** Please consider changing the sentence to: The following **<u>waterbody/pollutant combinations were listed as water quality impaired in previous cycles</u>** and remain listed in 2016 for the impairments specified below.	DPNR changed the language as suggested.
20.	***Page 14*** Please consider changing the sentence to: The following **<u>waterbody/pollutant combinations</u>** are new to the 303(d) list and/or have new associated monitoring stations with impairments.	DPNR changed the language as suggested.

21.	***Page 16 & 17*** High and Medium Priority waters; DPNR needs to identify the waterbody **<u>and</u>** pollutant combination that are identified as high or medium priority waters.	DPNR added the pollutant combination to the waterbody identified as required.
22.	***Page 17*** Please consider changing the following sentence to: DPNR-DEP has developed a schedule for completion of TMDLs for several water on the **<u>2016</u>** 303(d) list although not required by EPA regulations.	DPNR changed the language as suggested.
23.	***Page 17*** For low priority waters, waterbody/pollutant combinations would need to be identified and not just the waterbody.	DPNR added the pollutant combination to the waterbody identified as required.
24.	***Page 3, Section III*** "Data not used" - pH data collected in September and December of 2013 and 2014 was not used for the assessment purposes because "DPNR has reason to believe that………in-situ readings were not representative of the water quality conditions". Is there a way to prevent this issue in the future? For example, monitoring activities during repeated heavy rain and large waves could be postponed if data collected under these conditions is not useful. Also, can such data be dismissed if the calibration checks were successfully completed during the above mentioned monitoring events?	DPNR provides alternate sampling days due to adverse weather conditions (conditions that would put staff in danger and/or provide readings and data that are not representative of the water quality conditions) and avoids such sampling conditions as best as possible. Data taken from these weather events can be dismissed as they are considered an anomaly. Additionally, data that shows to be well outside the normal range can be considered an anomaly if historical data shows these to be statistically well out of normal range. A second probe should be used in the future if in-situ readings show to be well outside normal range, to verify the

		primary probe is functioning correctly. DPNR has updated the QAPP and SOPs to provide for these checks.
22.	***Page 4, Section IV*** "Delisting Actions" – it would be helpful to have a footnote defining "ADB Delisting code 13", to be located under the Table.	DPNR added the definition table for all ADB delisting codes under the Delisting Action Table.
23.	***Page 6, Section V*** "USVI Monument Lands" – It would be helpful if this section included a general information on the assessment results. For example, "none of the monitored AU were found to be impaired" OR "x amount of monitored AU were found to be impaired. Please refer to section … for more details."	DPNR added general information on the assessment results found in the USVI Monument Lands.
24.	***Page 17, Section IX*** "High Priority Waters" – First paragraph lists several potential reasons for listing a given waterbody as "high priority". It would be helpful if the specific reason was provided for each waterbody listed.	DPNR added general information as suggested.
25.	***Page 17, Section X*** "Medium Priority Waters" – see comment #15 above.	DPNR added general information as suggested.

Public Comments received on the Draft List of Impaired Waters and Narrative

Number	Comment	Response
1.	***Narrative, Section IV*** I'm not clear on what the reason / basis would be for "de-listing" a relatively large number of waters.	DPNR determines which watersheds are "delisted" from the 303(d) list for various parameters based on the Assessment Methodology document, previously public noticed and available on our website. Based on the analyzed and available data, the pollutants within those watersheds delisted weren't detected above our WQS more than once in the last 2 reporting cycles.
2.	I'm…not clear on the basis for distinguishing between "High Priority" and "Medium" or "Low" priority. There's a short paragraph that appears intended to speak to this, but given that essentially all USVI waters are impaired due to human activity, and are at relatively short distance from each other, the following paragraph gives rise to more questions about that, relative to "high priority" listing: "In this reporting cycle, DPNR-DEP has prioritized waters based on whether the impairment is likely due to human or physical factors, the size of the assessment unit, and the proximity of impaired assessment units to one another." There are many, many bays showing exceedances for fecal coliform and enterococci, and turbidity. Along with	DPNR considers many different factors when making an assessment unit either high, medium or low priority, as mentioned in the narrative. DPNR looks at how long an AU has been impaired, what is the apparent cause of the impairment, what sensitive species and marine life are in the area, other neighboring AUs and if they are also impaired, as well as a practical look to feasibility of getting a TMDL in place (i.e. what scientific difficulties might be present). It's a balance of how to most effectively protect USVI waters as a whole using the resources available.

	sewage, failures to control erosion / sedimentation into the bays would contribute to turbidity. I'm concerned because of the urgent need to address these matters on a territory-wide basis (immediately). Please help me understand some of these "nuances" of the process.	

Appendix 5: 2016 FINAL Responsiveness Summary for US Virgin Islands Integrated Report, 303(d) List & 305(b) Report

Responsiveness Summary

Final Comments

on

2016 US Virgin Islands

Integrated Report

December 2016

Prepared By:

Department of Planning & Natural Resources

Division of Environmental Protection

I. Introduction

The Virgin Islands Department of Planning and Natural Resources (DPNR) Division of Environmental Protection (DEP) has prepared this report to summarize and respond to the comments received from the United States Environmental Protection Agency Region 2 (EPA) on October 28, 2016 on the 2016 Integrated Report. The comments were received via email from Nathaniel Delano, EPA Region 2's New York Office.

II. Comments

Below is a summary of the comments received by DPNR and DPNR's responses to those comments:

EPA Comments received on the draft 2016 IR:

Number	Comment	Response
1.	***Page 15: Table II A.2*** It would be helpful if UWA concept and categories were briefly addressed before they are introduced in the table. or A brief reference to the section at the end of the document for the description of the individual categories will be more than sufficient.	VIDPNR added requested information on page 10, detailing different UWA categories.
2.	***Page 22: VI-STT-33*** EPA recommends developing a monitoring and assessment strategy for this assessment unit that includes active monitoring of this site	VIDPNR added this note, and plans to develop one accordingly.
3.	***Page 27: Table II A.4*** It appears that there are several locations in this report where Rendezvous Bay (STJ-25) and Rendezvous Bay subwatershed (STJ-27) are conflated, in terms of monitoring stations and listing of impairments. Please go through and clarify.	VIDPNR made appropriate clarifications, as there there were several points where the offshore site was referenced (STJ-27), but the number was STJ-25 (which was the correct AU). Those offshore references were corrected to reflect the nearshore AU. There were these same typos in the 303(d) list and delisting

Number	Comment	Response
		tables as well, which have also been corrected.
4.	***Page 34: Classifications, Total Waters and Applicable Standards*** I would suggest that the specific Water Quality Standards Regulations are identified by the adoption date (June 11, 2010). The USVI adopted new WQSR in 2015, which are not applicable to this document. This information is already provided later in the document, however I would suggest to move it to the front.	VIDPNR added the referenced section to this part, at the beginning of this section.
5.	***Page 36: Classifications, Total Waters and Applicable Standards*** Is this [WQS Class B Waters "Best Usage of Waters"] VI's antidegredation protection/policy? [This should] be flushed out a bit more. Specifically, noting that DPNP is working on establishing a baseline for biotic communities in order to be able to better define what "minimal" and "evident" mean. Also, laying out or referencing the history and status of development of biocriteria, and indicating that biocriteria assessments were not undertaken in this assessment cycle.	VIDPNR added requested clarification and details on page 180-181, under Assessment Methodology: Biological Assessment. A footnote is added here on page 36 referencing that
6.	***Page 39: Classifications, Total Waters and Applicable Standards*** Is this [WQS Class C Waters "Best Usage of Waters"] VI's antidegredation protection/policy? [This should] be flushed out a bit more. Specifically, noting that DPNP is working on establishing a baseline for biotic communities in order to be able to better define what "minimal" and "evident" mean. Also, laying out or referencing the history and status of development of biocriteria, and indicating that biocriteria assessments were not undertaken in this assessment cycle.	Similar to the previous comment, VIDPNR added requested clarification and details on page 180-181, under Assessment Methodology: Biological Assessment. A footnote is added here on page 39 referencing that
7.	***Page 47: Summary of Criterion Levels of Virgin Islands Water Quality Standards*** This link	VIDPNR updated the link to a better source for the 2006 criteria.

Number	Comment	Response
	[http://www.epa.gov/waterscience/ criteria/wqctable/index.html] may no longer be valid for accessing EPA's criteria published in 2006.	
8.	***Page 67: Table II.D.1*** Please update this title to reflect the fact that there TMDL's are primarily for nonpoint sources.	VIDPNR updated the title as requested. Further, it was noted that the table was not clear in detailing the TMDLs and their corresponding AUs and waterbodies. Further clarification was made, to include correcting the number of AUs with TMDLs.
9.	***Page 102: UST Program Information*** Is there any updated information on this program?	VIDPNR noted that the Program Manager for the UST program did not provide updated information for this cycle, so the previous cycle's information remained the most current information available.
10.	***Page 134: Types of Wetlands*** I would suggest to identify the source of this definition. Is this the USVI Code?	VIDPNR notes that the definition of wetlands in the draft references a wetland study, not the USVI Code. The definition was revised to reflect the definition of USVI Regulations.
11.	***Page 160: Assessment Methodology*** Add a sentence after this sentence that says: "The Clean Water Act defines the term "state" to include the U.S. Virgin Islands."	VIDPNR added as requested.
12.	***Page 164: Designated Use Attainment*** In reference to DPNR's statement that "The VI Water Quality Standards identify specific designated uses for the waters of the US Virgin Islands according to their waterbody classifications" EPA asks "What about Class A waters?"	VIDPNR notes that this refers to all Class waters of the USVI.
13.	***Page 175: Microbiological Assessment*** This [details of WQS for fecal coliform] is confusing. Needs clarity. What about the SSM?	VIDPNR notes that Fecal coliform doesn't have an SSM in the 2010 version, just a 30-day geometric mean.
14.	***Page 178: Conventional Assessment***	VIDPNR clarified and

Number	Comment	Response
	To be consistent with the parameters above, we should include the criteria here.	included all conventional parameters' criteria.
15.	***Page 180: Biological Assessment*** How is this [evaluation of biological conditions] determined? Question also applies to the "modification" phrases in the following two bullet points.	VIDPNR provided details and strategies for this determination on pages 180-181.
16.	***Page 182: Methodology Group Assessments*** Are there no criteria for conventional parameters for primary contact?	VIDPNR noted there are, so conventional assessments were added to the PCR column.
17.	***Page 248: Table III.C.1 Waterbodies, Segments, and Categories*** Various comments requesting clarification between this table and Table II.D.1	VIDPNR previously added clarification to Table II.D.1 to better reflect this table and prevent any data conflicts.
18.	***Page 248: Table III.C.1 Waterbodies, Segments, and Categories*** Is Secchi disk depth not simply a component of a turbidity impairment?	VIDPNR notes that it's a measure of clarity, so has distinction from just turbidity, and DPNR Regs do have language to clarity and turbidity, and doesn't lump them together. Secchi has always been separate for this reason.
19.	***Page 260: Figures II.C.2.a & II.C.2.b*** Please update these figures to reflect final integrated uses established in the above chart.	VIDPNR, with EPA's assistance, updated these figures as necessary.
20.	***Page 316: Appendix 1: 2016 303(d) List Narrative*** Delisting Table needs updating.	VIDPNR updated the delisting table in the 303(d) Narrative and Excel file to reflect changes made after EPA review of the data.
21.	***Page 322: Assessment Units Listed in 2016*** Some confusion here. The description suggests that this list will show impairments that were previously listed AND are listed in 2016. However, the actual list seems to also include combos that were impaired prior to the 2016 cycle. Please clarify and ensure that rejected delisting are included where appropriate.	VIDPNR provided clarification and made necessary changes to this list due to changes made to the 303(d) List and delisting table.
22.	***Page 338: Assessment Units Listed in 2016*** Round Bay's priority is High here, and Low in the 303 d list. Please clarify the	VIDPNR corrected the discrepancy.

Number	Comment	Response
	priority.	
23.	***Page 368: Comments received on the Draft List of Impaired Waters and Narrative*** This [DPNR response to lack of NOAA data assessed] doesn't appear to be an appropriate response to our comment which mentions that data we referenced in the last cycle should be used for this cycle. Just because it wasn't resubmitted doesn't mean it should not be used. Didn't DPNR already have this data that was not used in the last cycle?	VIDPNR noted originally that NOAA didn't resubmit the data for the 2014-2015 cycle when directly asked for data. However, VIDPNR has further noted that NOAA never submitted the data in full (as an official submittal of data meeting all QA/QC requirements) during the previous cycle either.