

## SECTION TWO PLANNING PROCESS

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This section describes the hazard mitigation planning process utilized in the development of the US Virgin Islands Territorial Hazard Mitigation Plan (the Plan). It begins with an overview of hazard mitigation planning and a description of the formation and participation of Hazard Mitigation Planning Committees that were established on St. Croix, St. Thomas and St. John to facilitate Plan development. This Section then explains how private and public sector involvement were encouraged through a series of public informational meetings and other public outreach techniques. Finally, this Section explains how the hazard mitigation planning process was integrated with other ongoing planning efforts and how key stakeholders participated in the Plan development.

This section is presented in the following eight subsections:

- 2.1 Overview of Hazard Mitigation Planning,
- 2.2 IFR Requirement for Planning Process
- 2.3 Description of the Planning Process,
- 2.4 Introduction of the Planning Team,
- 2.5 Public Involvement and Outreach,
- 2.6 Coordination among Government Agencies,
- 2.7 Integration with other Planning Efforts, and
- 2.8 Involving Key Stakeholders.

### 2.1 IFR REQUIREMENT FOR PLANNING PROCESS

IFR §201.4(b) states that “[a]n effective planning process is essential in developing and maintaining a good plan.” The IFR goes on to include three specific requirements for the process of developing Standard State Hazard Mitigation Plans:

- **Documentation of the Planning Process per Requirement §201.4(c)(1):** “[The State plan must include a] description of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.”
- **Coordination Among Agencies per Requirement §201.4(b):** “The [State] mitigation planning process should include coordination with other State agencies, appropriate Federal agencies, interested groups,…”
- **Program Integration per Requirement §201.4(b):** “[The State mitigation planning process should] be integrated to the extent possible with other ongoing State planning efforts as well as other FEMA mitigation programs and initiatives.”

### 2.2 OVERVIEW OF HAZARD MITIGATION PLANNING

Hazard mitigation planning is the process of organizing Territory resources, identifying and assessing hazard risks, and determining how to best minimize or otherwise manage those risks. This process results in a Mitigation Action Plan that identifies specific mitigation actions, each designed to achieve both short-term planning objectives and help the Territory move towards a long-term vision.

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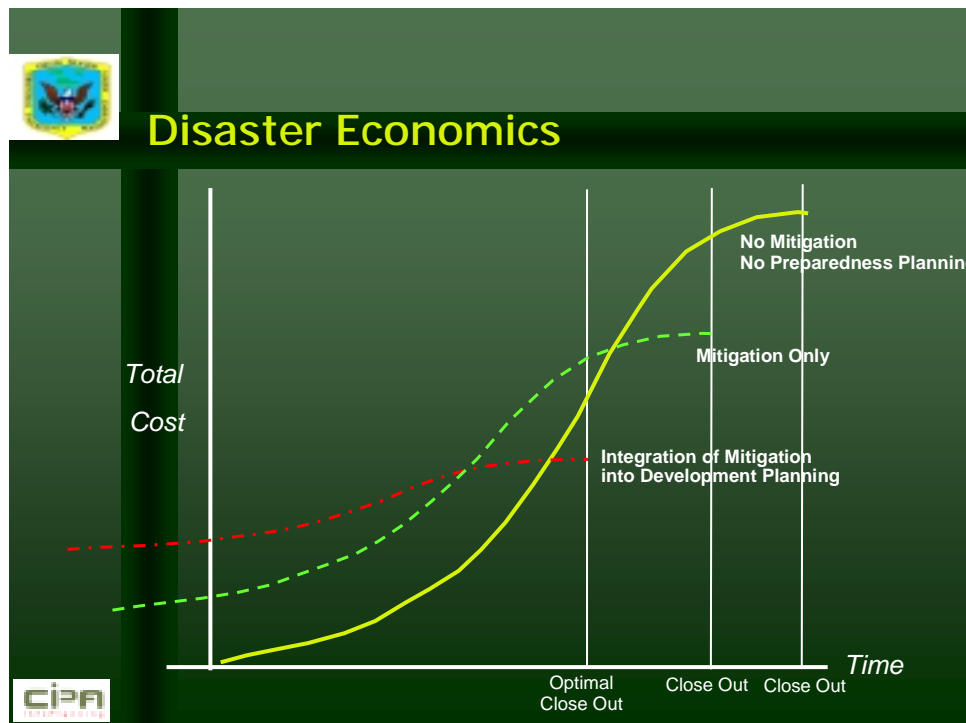
Responsibility for each mitigation action is assigned to a specific individual, department or agency along with a schedule for its implementation. Plan maintenance procedures are established for the routine monitoring of implementation progress, as well as for the evaluation and enhancement of the Plan itself. These maintenance procedures ensure that the Plan remains a dynamic and functional planning document over time.

Mitigation planning offers many benefits, including:

- Saving lives, property and money,
- Speeding recovery following disasters,
- Reducing future vulnerability through wise development and sustainable post-disaster recovery and reconstruction, and
- Expediting the receipt of pre-disaster and post-disaster grant funding.

Implementing hazard mitigation has the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery and reconstruction. Figure 2.1 illustrates the economic benefits of mitigation.

**FIGURE 2.1** *Disaster Economics*



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Implementing mitigation actions enables local residents, businesses and industries to recover from the effects of a natural disaster and gets communities and the economy back on track quickly with less disruption. The benefits of mitigation planning also extend beyond reducing the territory's vulnerability to hazards. Measures such as the acquisition or regulation of land in known hazard areas can help achieve other community goals, such as preserving open space, maintaining environmental health and enhancing recreational opportunities.

### 2.3 DESCRIPTION OF THE PLANNING PROCESS

The US Virgin Islands Territorial Hazard Mitigation Plan reflects a collaborative effort resulting from dedicated efforts of a number USVI agencies, departments, and authorities, in addition to the vital involvement of the public and private sectors. In essence, the hazard mitigation planning process as applied in the USVI is as important as the Plan document itself. This Subsection describes the planning framework undertaken by VITEMA during the development of the Plan.

The development of the US Virgin Islands Territorial Hazard Mitigation Plan has been led by the hazard mitigation staff working from VITEMA's Office in St. Croix. VITEMA adapted the planning process recommended by FEMA in the "How-to" Series of hazard mitigation planning documents (Publication Series 386) to address the geography of the US Virgin Islands and the unique governmental organization of the Territory. The planning approach was designed to meet all current regulatory guidance from FEMA related to State Hazard Mitigation Plans. The Plan shall be routinely monitored and updated to remain in compliance with the following enabling legislation and regulatory guidance:

- The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by the Disaster Mitigation Act of 2000 (Public Law 106-390, October 30, 2000), also referred in this document in an abbreviated format as DMA 2000;
- The Interim Final Rule to implement DMA 2000, as published in the Federal Register on February 26, 2002 (44 CFR Parts 201 and 206).

At the Project Initiation Meeting, the planning approach proposed by VITEMA's consultant, CIPA Inc., was refined to address the unique conditions present in the USVI. Unlike most states and US territories, the USVI does not have local political jurisdictions. The legislative branch of government is based in St. Thomas and includes representatives from all the major islands in the USVI. The executive agencies, departments and authorities are concentrated in St. Thomas, although most have offices and staff in St. Croix, and, to a lesser degree in St. John. In addition, each of the major islands within the USVI differs in terms of size, geology, geography, population, and land use.

In order to effectively address these issues, the Planning Team decided to develop the programmatic elements of the Plan at the Territorial level, while developing a series of prioritized mitigation actions that are specific to St. Croix, St. Thomas (which includes Water Island), and St. John.

This decision has essentially led to a Plan document that combines a Standard State Plan with some elements of local jurisdictional plans for St. Croix, St. Thomas, and St. John. The local

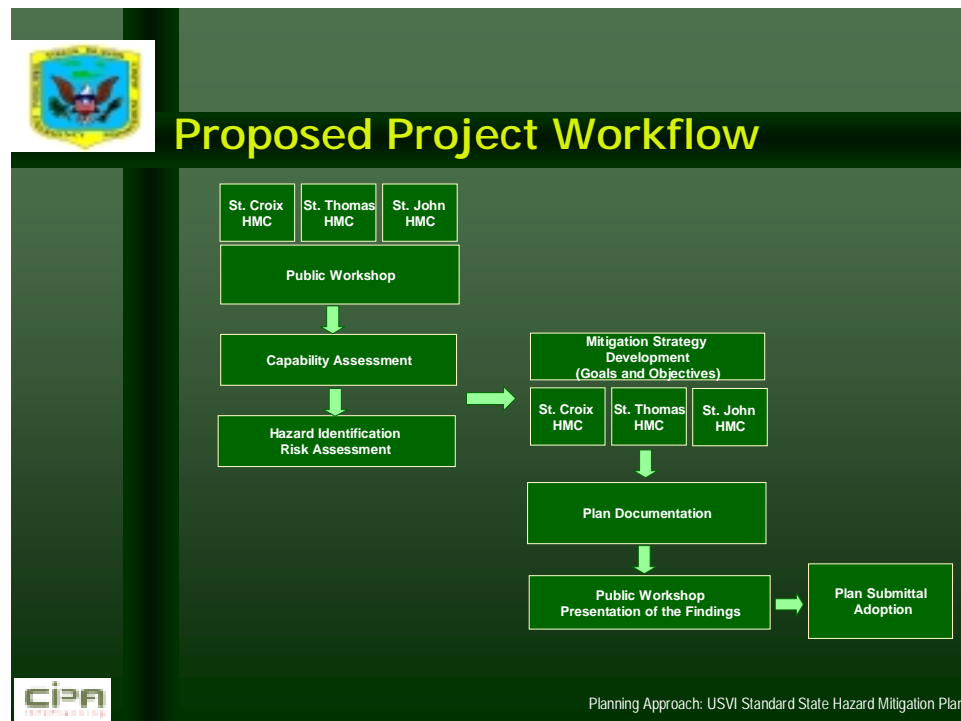
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elements refer primarily to mitigation actions that are specifically targeted for the three major islands and an implementation strategy to monitor, provide oversight, and implement mitigation actions on an island-by-island basis. However, it is important that only the Standard State review criteria be applied by FEMA during the review and approval process for the draft USVI Plan, as there are no local political jurisdictions within the structure of the Territorial government.

The Standard State Hazard Mitigation Plan Crosswalk, found just after the Adoption Resolution at the beginning of the Plan, provides a summary of the current standards of acceptability in meeting FEMA's regulatory guidance and notes the location of where each requirement is met within the Plan document.

The planning process included seven (7) steps that have been completed since project initiation in early 2004. These steps are displayed in Figure 2.2 and discussed below.

**FIGURE 2.2 Planning Approach**



The hazard mitigation planning process was initiated with the creation of a Hazard Mitigation Planning Committee on each island. These committees provided oversight to the plan development process and worked to engage the public through public informational workshops. All of the Hazard Mitigation Committee meetings were held as open meetings to provide ample opportunities for public involvement throughout the planning process. In addition, a series of two Public informational workshops provided citizens the opportunity to comment and provide valuable input for the development of the Plan.

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The next step is the Hazard Identification and Risk Assessment, found in Section 4 of the Plan, which identifies and evaluates the natural hazards that are of particular concern in the US Virgin Islands. This analysis included a *hazard profile* that presents a description of the location and extent of each identified hazard (delineate areas at risk), describes *previous occurrences* of hazard events (history), and provides an understanding of the *frequency* (probability) of each hazard event. To meet DMA 2000 regulatory guidance requirements, a risk assessment methodology was developed that is consistent with the FEMA HAZUS-MH® loss estimation tools and uses readily available historical hazard data to generate damage loss estimations for each hazard identified by VITEMA. This information is vital in evaluating and prioritizing a broad range of mitigation actions. The findings of the risk assessment enable the USVI government to focus their efforts on those structures or areas facing the greatest risk.

The following step in the mitigation planning process is the Capability Assessment, found in Section 5, that provides a comprehensive examination of the Territory's capacity to implement effective mitigation actions. It identifies existing opportunities for program enhancement through an evaluation of enabling legislation, regulations, plans and programs. Capabilities addressed in this section include administrative, organizational, technical, and fiscal capabilities, in addition to determining whether adequate legal authorities exist for implementing hazard mitigation. Information was obtained through the use of targeted interviews with senior representatives of key agencies, departments and authorities. Key laws, regulations, plans, and reports were compiled and analyzed. The purpose of this analysis is to identify any existing gaps, weaknesses or conflicts in programs or activities that may hinder mitigation efforts, or to identify those activities that can be built upon in establishing a successful hazard mitigation program in the US Virgin Islands.

The Risk Assessment and Capability Assessment provide the foundation for designing the Territory's hazard mitigation strategy. These background studies set the stage for developing, adopting and implementing the mitigation strategies described in Section 6. The Mitigation Strategy takes on a two-tier approach. This approach is intended to result in a plan that is both strategic (through the identification of long-term goals) and functional (through mid-range objectives and short-term actions that are applicable to each of the three major islands). Following the completion of the mitigation strategies section, VITEMA concentrated on designing measures to ensure the Plan's ultimate implementation, and adopted evaluation procedures to ensure that the Plan is routinely monitored and updated, as highlighted in Section 7.

### 2.4 INTRODUCTION OF THE PLANNING TEAM

The development of an effective state-level Hazard Mitigation Plan requires the inclusion in the planning process of representatives from a wide-range of public, private, and non-profit sectors. Clear lines of communication with the active participants and the general public are necessary. VITEMA established three Committees; the St. Thomas Mitigation Committee (covering St. Thomas and Water Island), the St. John Mitigation Committee and the St. Croix Mitigation Committee. The purpose of the Hazard Mitigation Committees was three-fold: (1) to provide oversight to the VITEMA contractor; (2) to contribute to the development of the Territory-wide mitigation strategy; and, (3) to identify and prioritize mitigation actions that were specific to each island.

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In general, the Territory-wide mitigation strategy addresses a range of programmatic or “soft” mitigation actions that will minimize damages associated with future development. In most instances, the island-specific mitigation actions are specific structural or “hard” mitigations actions intended to minimize or eliminate future disaster damages associated with existing development on the three major islands.

There were two important reasons for the formation of three separate island committees to guide the hazard mitigation plan development process. The VITEMA Project Coordinator determined that a decentralized yet coordinated effort would have the best potential to integrate the concerns of each Island into the Territorial Plan. Secondly, many of the selected participants of each Island Mitigation Committee have been engaged in mitigation planning efforts on their respective islands and therefore have an understanding of territory-wide issues and overall objectives of VITEMA.

In this planning process, the Island Hazard Mitigation Committees became the instrument of policy development, decision-making and management for the development of the Plan. The role of the committees is three-fold:

- to assess progress with regard to the developed project work plan;
- to facilitate coordination and cooperation between and among all government agencies; and
- to help develop recommendations for VITEMA regarding new initiatives and policy directions that result from this process.

The broad based structure of the Island Hazard Mitigation Committees facilitated communication between government and Federal agencies. It also provided logistical support to the consultant team during the execution of project tasks, and served as an ideal mechanism to facilitate strategic planning and decision-making during Committee meetings and public workshops.

### 2.3.1 PARTICIPATION IN HAZARD MITIGATION COMMITTEES

As the planning process evolved, additional committee members were asked to participate with each of the Island Committees to provide a broader range of public, private and non-profit sector participation. The membership of each of the three Island Hazard Mitigation Committees is provided in Appendix A. The St. Croix Mitigation Committee had 31 members; St. Thomas Mitigation Committee had 25 members; and the St. John Mitigation Committee had 18 members. On a territory-wide basis, the three Committees reflected the participation from the following Federal and Territorial agencies, businesses, institutions, associations, and organizations:

#### Public Sector

- Virgin Islands Territorial Emergency Management Agency (VITEMA)
- VI Office of Management & Budget (OMB)
- Water and Power Authority (WAPA)

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- Department of Planning and Natural Resources (DPNR), including the following Divisions within DPNR: Coastal Zone Management (CZM) and Division of Permits (DOP)
- Department of Public Works (DPW)
- VI Department of Health
- VI Department of Education
- Department of Housing, Parks and Recreation (HPR)
- VI Fire Service
- VI Police Department
- VI Emergency Management Services (EMS)
- VI Department of Justice
- VI Department of Human Services
- VI Department of Tourism
- Governor's Office
- Federal Emergency Management Agency (FEMA)
- United States Department of Agriculture (USDA)
- US National Park Service

### Private Sector

- St. Croix Chamber of Commerce
- HOVENSA Refinery
- VI Electric Company
- Westin Resort
- Caneel Bay Resort
- Frederiksted Health Clinic, Inc.
- VI Transit Corporation

### Non-Profit Sector

- Lutheran Services
- University of the Virgin Islands (UVI)
- Juan F. Luis Hospital
- American Red Cross
- VI VOAD National Voluntary Organizations Active in Disaster
- Water Island Civic Association
- Emmaus/Bethany Moravian Church
- Methodist Church

### 2.3.2 SUMMARY OF MITIGATION COMMITTEE MEETINGS

During the execution of this planning process, the Island Hazard Mitigation Committees have met a total of thirteen times for an average of four meetings per island (St. Thomas had five, with a special informational meeting scheduled for Water Island residents). Sign-in sheets for each of the

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meetings are provided in Appendix B. Below find a summary of the island hazard mitigation committee meetings (Table 2.1, 2.2 and 2.3).

**Table 2.1 Summary of Island Hazard Mitigation Committee meetings (St. Croix)**

Date	Attendance	Purpose and Outcomes
09.07.04	24 participants including: VITEMA, UVI, USDA, FEMA, VIPA, DPW, DOA, DOH, OMB, DPNR, EMS, VIFS, WAPA, HOVENSA, Governor's Office	<p>Review of findings from HIRA and Capability Assessment; adoption of goals and objectives; identification and prioritization of hazard mitigation actions.</p> <p>Outcomes included: agreement on territorial goals and objectives; list of potential mitigation actions; and assignments to add to and refine actions.</p>
06.24.04	22 participants including: WAPA, VITEMA, OMB, Red Cross, HOVENSA, VI Source (media), Interfaith Coalition, FEMA, Methodist Church	<p>Presentation on hazard mitigation planning process. Cardstorming technique to identify concerns, hazard issues, and potential hazard mitigation actions.</p> <p>Outcomes included: list of concerns.</p>
05.20.04	15 participants including: VITEMA, FEMA, UVI, HPR, Chamber of Commerce, OMB, VIFS, DPNR, WAPA, USDA, HOVENSA	<p>Introduction of the VITEMA Consultant Team. Powerpoint presentation on hazard mitigation planning approach as prepared by CIPA, Inc. Discussion on expansion of hazard mitigation committee to provide for a broader range of stakeholders.</p> <p>Outcomes included: understanding of proposed approach and project milestones.</p>
03.29.04	8 participants including: VITEMA, OMB, DPW, UVI, WAPA, FEMA	<p>Formation of Steering Committee to conduct monthly meetings, review and complete assignments, participate in community forums, and compile background information.</p> <p>Outcomes included: selection of Steering Committee members, and assignments of individual and departmental roles; identification of hazards of concern; listing of critical facilities to be evaluated in for STX.</p>
03.18.04	21 participants including: EMS, Chamber of Commerce, FEMA, VITEMA, OMB, WAPA, DOA, DPNR, Lutheran Services, UVI, EMS, FHC	<p>Explanation of purpose and requirements of planning process and requests for resource information.</p> <p>Outcomes included: specific assignments to obtain necessary data and background reports, legislation and regulations.</p>

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**Table 2.2 Summary of Island Hazard Mitigation Committee meetings (St. Thomas)**

Date	Attendance	Purpose and Outcomes
09.08.04	22 participants including: DPW, HPR, VITEMA, WAPA, DOA, OMB, RLS Hospital, Water Island Civic Assn, DPNR, FEMA, VIPD, VIFS, VIPA	<p>Review of findings from HIRA and Capability Assessment; adoption of goals and objectives; and identification and prioritization of hazard mitigation actions.</p> <p>Outcomes included: agreement on territorial goals and objectives; prioritized list of mitigation actions for Territory and for STT.</p>
07.17.04	4 participants including: VITEMA, FEMA, OMB, Water Island Civic Assn.	<p>Special meeting scheduled to inform the Water Island Civic Assn. about the hazard mitigation planning process and solicit input related specifically to address hazard issues identified for Water Island infrastructure and residences.</p>
06.23.04	15 participants including: VITEMA, FEMA, WAPA, EMS, VIFS, OMB	<p>Introduction of the VITEMA Consultant Team. Powerpoint presentation on hazard mitigation planning approach as prepared by CIPA, Inc. Discussion on expansion of hazard mitigation committee to provide for a broader range of stakeholders.</p> <p>Outcomes included: understanding of proposed approach and project milestones; list of concerns and identification of potential mitigation actions</p>
04.15.04	6 participants including: VITEMA, OMB, FEMA, Red Cross, UVI, DPW	<p>Formation of Steering Committee to conduct monthly meetings, review and complete assignments, participate in community forums, and compile background information.</p> <p>Outcomes included selection of Steering Committee and assignments on individual and dept. roles.</p>
03.25.04	10 participants including: VITEMA, OMB, FEMA, UVI, DOA, Tourism, VOAD, DPNR	<p>Explanation of purpose and requirements of planning process, request resource information.</p> <p>Outcomes included: specific assignments to obtain necessary data and background reports, legislation and regulations; identification of hazards of concern; need for separate hazard mitigation committee for St. John; determination of critical facilities to be evaluated in Plan.</p>

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**Table 2.3 Summary of Island Hazard Mitigation Committee meetings (St. John)**

Date	Attendance	Purpose and Outcomes
09.09.04	15 participants including: DPNR, DHS, EMS, FEMA, VITEMA, DOA, HPR, VIPD; DPW	<p>Review of findings from HIRA and Capability Assessment; adoption of goals and objectives; identification and prioritization of hazard mitigation actions.</p> <p>Outcomes included: agreement on territorial goals and objectives; prioritized list of mitigation actions for Territory and for STJ.</p>
06.22.04	26 participants including: hotels, FEMA, VITEMA, NPS, DPNR, DOJ, DOA, DHS, VIFS, WAPA, Legislative representative, Audubon, VIPD, DOE	<p>Presentation on hazard mitigation planning process. Cardstorming technique to identify concerns, hazard issues, and potential hazard mitigation actions.</p> <p>Outcomes included: list of concerns and increased understanding of the mitigation planning process.</p>
05.18.04	15 participants including: VI Transit, DPNR, EMS, Westin Resort, HPR, DHS, VIPD, VIFS, Marriott Hotel, Emmus/ Bethany Church, DOA	<p>Explanation of purpose and requirements of planning process, request resource information.</p> <p>Outcomes included: specific assignments to obtain necessary data and background reports, legislation and regulations.</p>

## 2.5 PUBLIC INVOLVEMENT AND OUTREACH

As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the natural hazards present in their community and take personal steps to reduce their potential impact. Public awareness is the “key” to making a home, neighborhood, school, business or city safer from the potential effects of natural hazards. To ensure success in achieving these goals, VITEMA has held a series of public workshops on each of the three major islands in the USVI.

### 2.5.1 PUBLIC NOTIFICATION

VITEMA’s public notification campaign was led by Ms. Jackeline J. Heyliger, VITEMA Mitigation Officer. The public was notified through the media, public notices and press releases. Written information about the project, including notices and project description notices, was disseminated to the public through the three Island Hazard Mitigation Committees. VITEMA has developed a group e-mail notification database to keep all Committee members informed of project progress, including major milestones. See Appendix C for documentation of public notification and examples of brochures and overview of the mitigation planning process.

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### 2.5.2 FIRST PUBLIC INFORMATION WORKSHOPS

The first of a series of two public information workshops was held on St. John on June 22, 2004; on St. Thomas on June 23, 2004; and, on St. Croix on June 24, 2004. Sign-in sheets from these workshops are available in Appendix B of this Plan. The first round of public informational meetings was held at 6:00 pm, following Island Mitigation Committee Meetings.

Meetings began with a brief PowerPoint presentation explaining the mitigation planning approach. Then each workshop was open to participants to express any and all concerns regarding the planning process, natural hazards and hazard mitigation. Emphasis was placed on recent experiences with natural hazards and the necessity to act immediately to ensure preparedness and reduce future losses from the next disaster event.

“Cardstorming” sessions where participants were encouraged to list three personal concerns related to hazard mitigation, and interactive consensus-building exercises provided important feedback from individuals who have been directly affected by recent disasters. These exercises allowed all participants the opportunity to express their issues, concerns and recommendations with regard to disaster recovery, natural hazards and reoccurring damages in their communities.

#### First St. Croix Public Information Workshop

The St. Croix Public Workshop was conducted at Gertude’s Restaurant. There were 22 participants in the workshop, including residents, representatives of community associations, businesses, organizations and many of the governmental representatives on the St. Croix Mitigation Committee. The outcomes from this community workshop include the following specific concerns identified by participants:

##### Infrastructure

- Power lines should be placed underground or replace wooden poles with steel or concrete poles.
- Issue of infiltration and inflow of stormwater into the downtown Christiansted sewer system, causing both localized flooding and water quality degradation problems in the downtown area.
- The frequency of power and telephone outages should be reduced.
- Localized flooding problems at the entrance road to Estate Welcome need to be addressed.
- The maintenance of tree limbs near power lines needs to be improved to prevent reoccurring power outages.
- The structural integrity of the Hospital to seismic and hurricane events should be evaluated by competent risk assessment engineers.
- A detailed engineering evaluation should be conducted on evacuation shelters so that they are usable and resistant to high wind, flooding and seismic events.
- Proper, well-stocked shelters should be available and their location made known to general public prior to advent of hurricane season.
- Structural assessments of bridges and box culverts should be conducted to assess their ability to withstand flood and seismic events

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### Administrative

- Notification of adjacent property owners should be required when permits/ work is granted, especially for private road construction.
- Projects should not be approved by DPNR without addressing potential flooding problems that will occur to downstream residents following construction.
- How will the Plan address existing homeowner problems with localized flooding in the neighborhood?
- A website should be created where homeowners and businesses can post issues of concern related to natural hazards, localized flooding problems, and issues raised by civic and neighborhood associations.

### First Responder Issues

- First responders need to be better trained to deal with a range of natural and human-caused hazards.
- Improved communication is needed before, during and after a disaster event.

### Guts and Stormwater Management

- Guts need to be periodically cleaned and maintained, especially prior to the advent of hurricane season.
- Road side ditches need to be periodically graded to maintain proper drainage.
- The stormwater drainage system from Contentment Basin Triangle to the outfall at Sea Bourne Air line needs to be studied to reduce localized flooding to homes and businesses.
- Revise current system of stormwater and sewer system in downtown Christiansted to improve drainage.
- Mt. Bijoux gut, especially in Frangipani area, has been a historical flooding problem. Some homes may need to be relocated and the gut allowed to revert to a more natural floodplain configuration.

### Electrical Outage

- A back-up contingency plan for sewage treatment pumping stations is needed.

### Flood

- #81 Work and Rest Area is located close to the road where there is a storm drain and frequent rain storms exceed the capacity of the storm drain. The closest residence has been flooded several times
- There is a flooding problem in Estate White Lady that has not been addressed for over 20 years
- Only a small rain storm caused the street to flood in the area in East Golden Rock, by the Casino Commission.
- The entrance road to the Sion Farm subdivision often floods.
- There is a lack of adequate drainage along many of the major roads throughout St. Croix.
- Flooding in Mon Bijou is a serious issue.
- Flooding along East Airport Road near Melvin Evans Highway.
- Flooding in the Rustoup-twist/La Valle area where the water comes down the hill and is met with seawater coming across the roadway from the sea.

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- Roadside flooding problems along Midlands Road.
- Flooding on the Queen Mary highway in the vicinity of the Department of Agriculture.
- Flooding on the Melvin Evans Highway just west of the East Airport Intersection. This curtails east/west travel across the Island.

### First St. Thomas Public Information Workshop

The St. Thomas Public Information Workshop was held at the Palms Court Harbor View Hotel. There were 15 participants in the workshop, including residents, representatives of community associations, businesses, organizations and many of the governmental representatives on the St. Thomas Mitigation Committee. Following are specific concerns identified by participants during this community workshop:

#### Infrastructure

- The USVI departments or agencies with a mitigation mandate should have the appropriate manpower, equipment and training to be responsive in both the pre- and post-disaster environments.
- There needs to be greater preparation and awareness of the vulnerability of the Virgin Islands to tidal waves and earthquakes.
- Power lines should be buried, where feasible, to minimize high wind damages from hurricanes.
- An alternate route out of the Borleaux area should be considered.
- Regarding the main hospital in St. Thomas, which is prone to seismic and high wind damages, there is no plan or place to relocate hospital patients from RLS in case of major structural damage to the facility. One option to consider would be to retrofit the Lockhart School to receive special equipment and hospital beds.
- Landfill stability and subterranean fires are a concern to residents in the Bovoni area.
- Consistent inspection of construction work by DPNR & DPW for new structures and road construction is sorely needed.
- With the large number of residential housing and development in the Botany Bay area on the West End, the functionality of one road in and out is a potential issue following disaster events.

#### Legislative

- The adoption of the new IBC building code through the USVI legislature should be expedited.

#### Financial

- Will the Plan spell out the USVI funds that will need to be obligated on an annual basis to implement the most urgent mitigation measures?
- Will the USVI government be responsible for addressing mitigation if other funding is not available?
- If recommendations are not implemented, how will that impact future FEMA funding?
- Would the proposed Charlotte Amalie harbour dredging (said to reduce tidal surge), be eligible for funding as a future FEMA hazard mitigation project?

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- Will non-profit organizations such as Habitat for Humanity and Americorps be considered as potential recipients of grant funds to construct or retrofit low to moderate income residential housing?

### Administrative

- Will the plan require input of all department and agency heads?
- An administrative review of all major government projects, similar to CZM permit but from a hazard mitigation and sustainability perspective is needed.

### Public Awareness/Education

- A public awareness campaign, through print media, radio, and television, should be spearheaded by VITEMA and coordinated with key mitigation stakeholder organizations such as the Chamber of Commerce, Rotary, Lions Club, and the Insurance Association.
- More extensive and targeted public information and education on hazard mitigation is needed to inform residents and enlist more public participation.

### Guts and Stormwater Management

- Major guts and storm drain systems must be periodically cleared of accumulated sediments and debris. Most of the storm drainage system in Charlotte Amalie is cleaned on a regular basis and is often obstructed with mud, garbage and debris. .
- Improved drainage along public roads that are often subject to localized flooding is needed to increase the capability to carry flood waters.

### Flood

- It is very important that localized flooding following a disaster event not impede access/egress for key USVI departments, agencies and authorities involved in the immediate response effort.
- Caret Bay West has flooding concerns that prevent emergency vehicle access during frequent heavy rainfall events.
- Flooding is still present at the motor vehicle pool at the Sub-base.
- Localized flooding at the WICO-Mandela Circle.
- Past road repaving work in the business district of Charlotte Amalie has created a situation where localized shallow flooding enters businesses, institutional uses, and residential homes during heavy rainfall events.
- Rt. 33 Netteberg near Northside road suffers from erosion associated with repetitive flooding events.

### Earthquake

- Because the Waterfront Highway was constructed on filled land, is it structurally sound in the event of a massive earthquake?
- Preparedness in case of a massive earthquake has not been adequately addressed by the USVI government.
- Concern about increasing number of residences built on steep slopes and the potential for structural damages following a major earthquake. How can DPNR refine its building permit and inspection process to minimize future damages?
- Educating the public about earthquake effects

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- A major earthquake may cause catastrophic failure along the Charlotte Amalie waterfront bulkhead, taking out buried water and sewer pipelines, and, electrical conduits, and resulting in a lack of firefighting capabilities, and raising sanitation and public health issues.
- Old unoccupied buildings need to be reviewed for potential collapse in an earthquake event or a source of wind-blown projectiles in a hurricane event.

### Landslides

- Removal of loose rocks and boulders from steep cut slopes along hillside roads would minimize the potential for landslides following seismic and hurricane events.

### Tsunami

- Frenchtown is unprotected from a major Tsunami event, except for the Catholic Church, which should be considered for use as an emergency shelter.

## **First St. John Public Information Workshop**

The St. John community workshop was conducted at the Marriott Hotel. There were 26 participants in the workshop, including residents, representatives of community associations, businesses, organizations and many of the governmental representatives on the St. Thomas Mitigation Committee. Following are specific concerns identified by participants during this public information workshop.

### General

- The hazard mitigation needs of St. John need to be addressed separately from other islands as they have different problems.

### Infrastructure

- Power lines should be buried to minimize hurricane damage losses and ensure an expedited recovery process.

### Administrative

- How will the Plan address other Federal agencies' facilities that may require mitigation to reduce the impact of an event on the general public?

### Legislation

- Make legal changes so that FEMA funding can assist roadside maintenance and thereby encourage the USVI government to take greater responsibility in addressing roadside drainage problems.

### Guts

- DPNR needs to place greater attention to preventing residential construction and other developmental impacts in and near natural guts.

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### Roads

- Additional weight limits on selected roads should be considered by DPW to ensure that they don't readily deteriorate throughout the year from storm events.

### Flood

- Stormwater management controls are needed to reduce flooding and landslide problems.
- Localized flooding at the Guy Benjamin School in Coral Bay.
- Flooding of WAPA building and treatment plant.

### Landslides

- Heavy rains cause landslides blocking two major roads in St. Johns.
- Stabilization of cut and fill slopes on Rte. 10, Centerline Road, is necessary to allow access/egress for emergency vehicles and residents.
- Landslides on Centerline Road- from Cruz Bay to Coral Bay
- Federal Standards need to be implemented to stabilize the steep cliffs on Centerline Road.

### Earthquake/Tsunami

- An earthquake generating a tsunami can impact vulnerable facilities, particularly the VIPA port facilities, St. John's single lifeline to St. Thomas.

### Wildland Fire

- A potential hazard during dry seasons.

### 2.5.3 SECOND ROUND OF PUBLIC INFORMATION WORKSHOPS

The second round of public information meetings included members of the each island hazard mitigation committee and the general public. These meetings were conducted on St. Thomas on *insert date*; St. Croix on *insert date*; and St. John on *insert date*. Sign-in sheets along with detailed minutes from these workshops are available in **Appendix E** of this Plan.

*Editors' Note: This version of the Plan is a Preliminary Draft Document, prepared by CIPA Inc. on behalf and prior to a detailed review by VITEMA. When reviewing this version of the Plan please note that the second round of Public Information Workshops hasn't occurred yet and will be held following the review of the Preliminary Draft Document by the public, VITEMA, and FEMA. Additional information regarding the second round of public information workshops will be included in the Final Report Document, to be submitted to VITEMA and FEMA following the second round of workshop, anticipated to be held in early November on each of three major US Virgin Islands.*

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### 2.6 COORDINATION AMONG GOVERNMENT AGENCIES

For a State Hazard Mitigation Plan to become an effective tool in implementing hazard mitigation it cannot remain the sole province of the State Emergency Management Agency. Coordination among government agencies that have a role in implementing hazard mitigation is essential.

There were numerous ways in which VITEMA encouraged coordination among US Virgin Island departments, agencies and authorities. The most important way that VITEMA encouraged coordination was to invite representatives of the relevant agencies to participate in the three Island Hazard Mitigation Committees. The list of Public Sector participation in the Committees, presented in Section 2.3.1, reflects the success that VITEMA had in involving a broad range of Territorial and Federal agencies in the mitigation planning process from the very beginning.

Public Sector participants were encouraged to discuss the planning process with other staff in their respective departments. This brought their collective insight and enabled identification of potential mitigation projects that could be brought back to subsequent Committee meetings. By interfacing with representatives of other VI departments within the setting of the Hazard Mitigation Committee meetings, participants gained an understanding of the respective roles of many agencies and departments. Opportunities to achieve multiple planning objectives surfaced; further increasing the probability of implementing hazard mitigation measures over time. All of the agencies that participated in the Hazard Mitigation Committee meetings had a stake and a vote in identifying and prioritizing hazard mitigation actions at the Territorial-level as well as for each major Island.

Another way that VITEMA facilitated coordination among Territorial agencies was to distribute a series of letters from the VITEMA Commissioner, Harold Baker, to the Commissioners of three departments listed below that have a direct role in implementing hazard mitigation. These letters encouraged involvement of the departments in the overall development of the Plan. They described the mitigation planning process and requested the Commissioners' assistance in compiling necessary background information for the risk and capability assessments.

Early in the mitigation planning process (mid-June 2004) the following three key departments Commissioners received letters included in the Plan as Appendix F:

#### The Office of Management and Budget (OMB)

As the Governor's Authorized Representative, OMB administers FEMA's Hazard Mitigation Grant Program following Presidential Disaster Declarations;

#### The Department of Public Works (DPW)

DPW has lead responsibility for the design, construction and maintenance of public roads throughout the Islands;

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### The Department of Planning and Natural Resources (DPNR)

DPNR is responsible for administration of the Natural Flood Insurance Program (NFIP). It is also responsible for the following activities that have the potential to reduce the future vulnerability of the USVI:

- Reviewing subdivision plans and development proposals
- Developing long-range land use plans and policies for the US Virgin Islands
- Approving building permits
- Conducting building inspections
- Protecting natural resources

As part of the Capability Assessment VITEMA's contractor, CIPA, conducted a series of one-on-one, group or telephone interviews with mid-level representatives of key USVI agencies. Their goal was twofold: to obtain legislation, regulations, plans, and policies relevant to hazard mitigation; and, to jointly discuss opportunities to encourage hazard mitigation in the agencies day-to-day, and strategic, long-term planning activities. This interactive process was beneficial in improving coordination among agencies with a major role in implementing hazard mitigation. Given the critical role played by DPNR in current and long-range land use planning, the majority of interviews involved representatives from a number of DPNR divisions in St. Thomas and in St. Croix.

The final way in which VITEMA encouraged interagency coordination on development of the Hazard Mitigation Plan was to give DPNR, OMB and DPW the opportunity to review the preliminary draft Plan. This enabled VITEMA to address agency concerns prior to the draft document being submitted to FEMA, the last step in the Plan approval and adoption process.

## 2.7 INTEGRATION WITH OTHER PLANNING EFFORTS

The VITEMA Project Planning Team reviewed all relevant completed plans and on-going planning efforts. This enabled the Planning Team to gain a historical perspective and to identify opportunities where hazard mitigation can be better integrated into USVI long-range planning initiatives. The plans reviewed included: past hazard mitigation plans, emergency response plans, hurricane evacuation studies, hazard specific mitigation studies, coastal zone management plans, water quality protection plans, and DPNR comprehensive planning documents. The specific documents reviewed and recommendations made to promote the integration of hazard mitigation concerns can be found in Section 4, Capability Assessment.

During the initial phase of the capability assessment, the VITEMA Project Planning Team became aware of the ongoing legislative process to revise and enact the Comprehensive Land and Water Use Plan, a comprehensive set of development regulations. The original plan was first prepared in 1990, but had remained a draft document and was never formally adopted by the VI legislature. In early 2004, DPNR was tasked with updating the draft plan Comprehensive Land and Water Use Plan and submitting the revised plan for legislative review. Public hearings on the draft plan are currently underway.

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The draft version of the Territorial Hazard Mitigation Plan will not be available for DPNR's review before October 15, 2004. Therefore, the Territorial Hazard Mitigation Planning Team provided DPNR with a memorandum, dated September 23, 2004, with a series of recommendations to better integrate hazard mitigation into the development review process, as this important set of development regulations moves towards enactment. The memorandum is included in this Plan as Appendix G.

### 2.8 INVOLVING KEY STAKEHOLDERS

VITEMA has undertaken a number of steps to encourage the widest range of stakeholder involvement right from the onset of the mitigation planning process. 1) Public notices were provided to the print, voice and screen media, encouraging the general public and special interest groups to participate in the process (Appendix C). 2) VITEMA prepared a public outreach brochure describing the hazard mitigation planning process, encouraging public participation, and providing dates for first round of public information workshops (Appendix C). 3) Representatives of civic associations, environmental organizations, the Chamber of Commerce, key businesses and industries, churches, educational institutions, voluntary disaster relief organizations, neighborhood associations, and journalists were invited to be members of the three Island Hazard Mitigation Committees. The range of stakeholder involvement is reflected by the various affiliations (outside of the Public Sector) in the lists of Committee members found in Appendix A.