Gregory Guannel



Strategic Plan 2021

Table of Contents

[Energy Strategies 3](#_Toc62889686)

[Energy Strategy 1: Create Pathways to Increase Energy Infrastructure Resilience of the USVI 3](#_Toc62889687)

[Energy Strategy 2: Empower community actors to impact personal and collective energy pathways and territorial policy, through knowledge 3](#_Toc62889688)

[Energy Strategy 3: Improve the Quality of Renewable Energy and Energy Related Workforce 3](#_Toc62889689)

[Sustainable Materials Management Strategies 4](#_Toc62889690)

[SMM Strategy 1: Increase the Type, Scale and Effectiveness of Waste Management Infrastructure 4](#_Toc62889691)

[SMM Strategy 2: Increase Waste Management Literacy in the USVI 4](#_Toc62889692)

[Water and Food Security Strategies 4](#_Toc62889693)

[Water and Food Security Strategy 1: Promote Access to Sustainable Drinking Water 4](#_Toc62889694)

[Water and Food Security Strategy 2: USVI Residents Understand How to Manage their Cisterns More Efficiently 5](#_Toc62889695)

[Water and Food Security Strategy 3: Increase the Resilience of Ecosystems and the Food Production System 5](#_Toc62889696)

[Disaster Risk Reduction Strategies 5](#_Toc62889697)

[DRR Strategy 1: Collect Weather and Climate Related Data in the Virgin Islands and Monitor the Response of Systems 5](#_Toc62889698)

[DRR Strategy 2: Devise Mitigation Strategies Against Impacts of Natural Hazards 6](#_Toc62889699)

[All-Pillar Strategies 6](#_Toc62889700)

[All-Pillar Strategy 1: Increase the Number of Students in the USVI That Are Interested in STEM 6](#_Toc62889701)

[All-Pillar Strategy 2: Generate Student Engagement 6](#_Toc62889702)

**Caribbean Green Technology Center Mission Statement:**

The mission of the CGTC is to develop, promote and help implement the use of innovative green technologies to improve the sustainable development of the U.S. Virgin Islands and the well-being of all the Territory's communities.

**CGTC four main pillars include Energy, Sustainable Materials Management, Water and Food Security, and Disaster Risk Reduction.**

**Energy** encompasses electricity, transportation, heating and cooking. The CGTC focuses on making energy accessible and affordable to Virgin Islander at all times.

**Sustainable Materials Management** is the systemic approach to using and reusing material more productively over their entire life cycle (EPA). CGTC is dedicated to developing the circular economy in the Virgin Islands.

**Water and Food Security**. While water is abundant, useable water is scare. CGTC is dedicated to promoting sustainable water management in support of household needs and food production to increase resilience.

**Disaster Risk Reduction**. We depend on infrastructure systems to provide critical services. CGTC is working to increase the resilience of infrastructure systems to ensure that we receive the services we need in times of major disruptions.

The following Goals and Objectives, based on the UVI Strategic Plan, support advance CGTC work on these pillars:

**Goal 1**: Become a leader in the exploration and implementation of renewable energy technology, resilience, and disaster mitigation

Objective 1: Implement demonstrations and high impact projects that increase infrastructure resilience

Objective 2: Become a leader through research, outreach, and knowledge sharing

**Goal 2**: UVI will develop 21st century academic and vocational & technical programs and policies, to meet the changing workforce development needs of the Virgin Islands and Caribbean

Increase course offerings and training in the field of renewable energy technology, engineering and system thinking

**Goal 3**: Improve the environment for student success and achievement through innovative opportunities for student engagement

Engage students on projects that directly benefits existing efforts, increase their knowledge and understanding on the science used to meet our project objectives, and provide them with a sense of the types of careers or studies that can be pursued to further refine their skills.

## Lightbulb**Energy Strategies**

### Energy Strategy 1: Create Pathways to Increase Energy Infrastructure Resilience of the USVI (Goal 1, Obj. 1)

Outcome 1: The public can see examples of concrete of RE technologies that can be deployed in the USVI and understand the types of benefit they can derive from them (resilience, economic savings, life sustaining, etc.)

Outcome 2: The number of low- and medium-income individuals who own and have access to RE technology devices has increased

Outcome 3: The energy sector is more robust because it has a roadmap to help direct investments and improve operations

Activity 1: Expand UVI’s energy infrastructure resilience

Activity 2: Implement community-wide demonstration programs for RE systems in the Territory

Activity 3: Implement programs for renewable energy installation at the household level

Activity 4: Create, in partnership with VI Energy Office, a Comprehensive Energy Strategic Plan for the Territory

### Energy Strategy 2: Empower community actors to impact personal and collective energy pathways and territorial policy, through knowledge (Goal 1, Obj. 2)

Outcome 1: Policy makers are better informed to improve existing policies

Outcome 2: Stakeholders and individuals are better informed to make energy investment choices for themselves and the larger community

Outcome 3: Community is voicing its opinion about the energy development pathways

Activity 1: Produce and distribute energy related educational material to increase the public literacy

Activity 2: Organize and Implement Outreach Events

Activity 3: Comprehensive Energy Strategic Plan – Community Outreach

### Energy Strategy 3: Improve the Quality of Renewable Energy and Energy Related Workforce (Goal 2)

Outcome 1: More than 10 students graduating from UVI have enough knowledge to gain employment in entry-level positions in energy related field or pursue advanced degree in that field.

Outcome 2: Standards for solar PV installation and installers in the USVI are created

Outcome 3: UVI students are informed about what energy-related careers are and how to pursue them

Activity 1: Increase offerings of degrees and certificates

Activity 2: Identify barriers to working in energy field in the USVI

## Recycle sign**Sustainable Materials Management Strategies**

### SMM Strategy 1: Increase the Types, Scale and Effectiveness of Waste Management Infrastructure (Goal 1, Obj. 1)

Outcome 1: UVI reduces the amount of waste sent to the landfill and increases its reuse and recycling infrastructure

Outcome 2: CGTC assists VIWMA to better understand the VI waste management system operations and vulnerabilities, and co-develop solutions to the problems identified

Activity 1: Establish a recycling and compost program at UVI

Activity 2: Understand the needs of and barrier to SMM in the Territory

Activity 3: Identify projects and funding opportunities to help addressed the vulnerability of the waste management system in the USVI

### SMM Strategy 2: Increase Waste Management Literacy in the USVI (Goal 1, Obj. 2)

Outcome 1: Virgin Islanders understand and improve their waste management habits

Outcome 2: Virgin Islanders know feasible options for sustainable material management

Activity 1: UVI Recycling Initiative awareness campaign and launch events

Activity 2: Virgin Islanders understand the sustainable materials management hierarchy and feasible options that are or can be implemented locally

Activity 3: Connect people with resources on SMM and locations of drop-off centers for typical household waste streams



## **Water and Food Security Strategies**

### Water and Food Security Strategy 1: Promote Access to Sustainable Drinking Water (Goal 1, Obj. 1, 2)

Outcome 1: UVI understands how water is produced, distributed and used on its campuses

Outcome 2: UVI has water fountains or refill stations to reduce amount of bottled water used

Activity 1: UVI understands campus water network and usage

Activity 2: Identify funds to install water fountains and refill stations

### Water and Food Security Strategy 2: USVI Residents Understand How to Manage their Cisterns More Efficiently (Goal 1, Obj. 2)

Outcome 1: USVI resident understand how much water they can harvest from their roofs

Outcome 2: USVI residents have resources to better manage water

Outcome 3: USVI residents better understand how to maintain their cisterns and improve water quality

Activity 1: Understand and measure the water quality at UVI St. Thomas and St. Croix campus

Activity 2: Quantify rainwater harvesting potential in the USVI for the different roof types and climates

Activity 3: Understand water consumption practices in the VI

Activity 4: Increase the understanding of USVI residents of drivers of bad water quality, and the types of mitigation strategies they can implement

### Water and Food Security Strategy 3: Increase the Resilience of Ecosystems and the Food Production System (Goal 1, Obj. 1)

Outcome 1: Farmers are better equipped to produce food under drought conditions

Outcome 2: Farmers understand the vulnerability of their production/distribution systems to drought or flood, and how to increase their resilience.

Activity 1: Promote native plants and ecosystem restoration

Activity 2: Promote drought tolerant fruit production

Activity 3: Improve education of farmers on water management for drought and floods

## **Disaster Risk Reduction Strategies**

### DRR Strategy 1: Collect Weather and Climate Related Data in the Virgin Islands and Monitor the Response of Systems (Goal 1, Obj. 2)

Outcome 1: The USVI has more high-quality weather stations

Outcome 2: The USVI better understands the coastal processes shaping its beaches and has solutions to mitigate the impacts of climate change

Outcome 3: The USVI has a better understanding of the impact of sea level rise and flooding on infrastructure

Activity 1: Reinvigorate weather station network for the purposes of compiling data for precipitation and to mitigate the impacts of drought

Activity 2: Map, characterize and monitor shorelines and their response to climate stressors; identify mitigation strategies

Activity 3: Map drainage infrastructure and the impact of sea-level rise on their performance

Activity 4: Monitor High water Mark and King Tide elevation and their impacts on infrastructure

### DRR Strategy 2: Devise Mitigation Strategies Against Impacts of Natural Hazards (Goal 1, Obj. 2)

Outcome 1: Better understanding of hazards and risk factors in the territory

Outcome 2: Agencies have a roadmap to create mitigation projects

Activity 1: Complete the HMRP for the USVI

Activity 2: Implement mitigation strategies for DRR and Sustainable Development

****

## **All-Pillar Strategies**

### All-Pillar Strategy 1: Increase the Number of Students in the USVI That Are Interested in STEM (Goal 2)

Outcome 1: UVI Students have stronger engineering capacities

Outcome 2: More USVI high schoolers want to continue their career in STEM

Outcome 3: Bolster future local workforce

Activity 1: Work with Physics faculty to create the Pre-engineering program

Activity 2: Outreach with College of Sci and Math about career opportunities in STEM and Engineering

Activity 3: Bolster HS STEM literacy in engineering

### All-Pillar Strategy 2: Generate Student Engagement (Goal 3)

Outcome 1: Students are exposed to fields of study that are not widely taught at UVI

Outcome 2: Students are more familiar with USVI Infrastructure systems

Outcome 3: Students are actively engaged in societal issues that impact the Territory

Activity 1: Student Research Activities

Activity 2: Involve students in outreach events

Activity 3: Involve Students in nation-wide events and other competitions

Activity 4: Create a youth ambassador program