EDUCATION
The USVI’s educational system includes K-12 schools and the University of the Virgin Islands. The K-12 system includes 31 public schools run by the Virgin Islands Department of Education (VIDOE) and 28 parochial and private schools supported by some VIDOE funding, as well as a small number of home-schooled students. The University of the Virgin Islands (UVI) is the sole post-secondary institution in the Territory (excepting online programs). It offers undergraduate and graduate degrees, as well as online degrees, community programs, certificates, and continuing education.

Hurricanes Irma and Maria affected all elements of the education system, damaging or destroying school and university buildings and knocking out essential services like power and telecommunications. They also affected the lives of students and teachers—some left the Territory and did not return for many months, if at all, leading to a 17 percent drop in public school enrollment, an eight percent drop in university enrollment, and a yet to be determined drop in private school enrollment.

In the hurricanes’ aftermath, VIDOE, private schools, and UVI were left with the task of restoring instructional sessions as quickly as feasible, while simultaneously rebuilding communities and restoring a sense of normalcy for students in the Territory. Parents, educators, school administrators, and the community-at-large faced an abundance of questions about the state of education after the devastation of Hurricanes Irma and Maria. Providing resources to staff and students, as well as finding safe temporary facilities to continue educational instruction, became the priorities for VIDOE in order to bring the 2017/2018 school year to a successful close. The University of the Virgin Islands was able to resume classes within one month after the first hurricane and, through an innovative reconfiguration of the curriculum, was able to successfully complete the Fall and Spring semesters.

In the future, risks to the system will include hurricane winds, rainfall, and storm surge similar to those the 2017 hurricane season brought. Sea level rise will threaten low-lying facilities, high heat will increase the demand for air conditioning, and changes in precipitation may create water supply constraints for several schools that rely on cisterns in addition to WAPA water.

Strategies to make the education system more resilient include better preparing for future storms (including by developing standard operating plans, training employees, diversifying power sources, and upgrading buildings to become emergency shelters), hardening and rebuilding facilities (including by using modular and sprung facilities while permanent ones are being constructed), and creating new opportunities for students (including by supporting farm-to-school initiatives and establishing an oceanic and atmospheric research center).
HOW THE SYSTEM WORKS

Education plays an important role anywhere, but it is particularly crucial in the USVI, which faces high levels of poverty, high costs of living, and a geographically restrictive job market. Among adults over the age of 25, roughly 23 percent do not have a high school diploma or GED, 35 percent have completed high school or a GED, and only 16 percent hold an associate, bachelor, or higher-level college degree (see chart: Education level of USVI residents above the age of 25). School student population is more vulnerable overall than most comparable stateside populations, and school students lag behind most states in test scores. All public schools in the USVI participate in federal free meal programs for students as a result of qualifying economic disadvantage and test scores across the Territory (see chart: USVI K-12 students receiving school nutrition support). It should also be noted that while the Territory has made vast strides in providing accessible, affordable Internet in the last five years, an estimated 14 percent of the population still does not have Internet access.

K-12 education

K-12 education in the USVI is provided through public and private schools (both parochial and independent). School enrollment is mandatory for all children from ages five through 18. Private and parochial schools accept children ages three to 18 through each school’s unique application process.

Private and parochial schools

The Territory is home to many private and parochial schools across St. Thomas, St. John, and St. Croix, 28 of which receive some funding from federal grants. Enrollment numbers at private schools in the Territory vary based on the schools’ grades and facilities; some offer preschool or kindergarten through grade 12, while others offer only elementary and/or middle school grades. Schools range in size from a few dozen to 500 students. While many USVI private schools are parochial or affiliated with a particular church or denomination, several schools have no religious affiliation.

Private schools are funded by student tuition, grants, and private donations and endowments. While all private and parochial schools charge tuition fees, they also offer varied levels of financial aid and scholarships. The Territory’s private and parochial schools also receive some funding from the US Department of Education Consolidated Grant.

Virgin Islands Department of Education

The Virgin Islands Department of Education (VIDOE) is an executive branch of the Government of the Virgin Islands (GVI) responsible for all K-12 public education, special needs and adult education through age 21, and support services such as student transportation, library services, and child nutrition. Through VIDOEx, the public educational system in the USVI provides a free education to all children from kindergarten to age 21 (for special education). In the 2017 fiscal year, 13,194 students were enrolled in the USVI public school system—not including those served by VIDOEx’s adult education programs. This is a slight decrease (4.4 percent) from 2016, when VIDOEx served 13,805 registered students. At the beginning of the 2017/2018 school year, there were a total of 31 public schools in the Territory.

In addition to the public schools themselves, VIDOEx oversees three Non-Instructional State Operational Education Facilities to provide support services for students. These sites housed many division offices critical to the delivery of educational instruction (all three are now shuttered as a result of storm damage). On St. Croix, these included the VIDOEx headquarters and a Curriculum Center. The St. Croix District VIDOEx Headquarters provided information on school-related finances, policy, and procedures to parents, students, and the community. The facility housed the Offices of the Insular Superintendent, Business Office, and Payroll Office. The St. Croix Curriculum Center housed the district content coordinators and IT. It also provided information and resources related to instruction (teaching and learning). The St. Thomas-St. John District Curriculum Center housed the Insular Superintendent’s Office, which provided students, parents, and the community registration services and support and resources on teaching and learning. The center also dealt with federal grants and procurement and housed school lunch freezer/refrigerator and a maintenance division.

Adequate funding to support the public education infrastructure in the USVI is an ongoing problem. VIDOEx receives approximately $167 million a year from the Territory’s General Fund budget (locally funded). The VIDOEx also brings in about $40 million in funding from other sources, including about $83 million from the federal government. Additionally, VIDOEx was allotted approximately $15 million in funds to supplement teaching and learning processes through the US Department of Education’s Consolidated Grant to the Insular Areas (Consolidated Grant). In addition to supporting the 31 public schools, a percentage of this allotment supports 28 private schools in both districts. The Consolidated Grant is available only to US territories and serves as a single application vehicle for funding disbursed under multiple programs.

Post-secondary education: University of the Virgin Islands

Founded in 1962, the University of the Virgin Islands (UVI) is the only institution of higher learning in the Territory. A public, co-ed, land-grant Historically Black College/University (HBCU), UVI offers degree programs in 47 undergraduate and graduate disciplines to approximately 2,400 enrolled students. UVI has two primary campuses on St. Thomas and St. Croix, as well as an Academic Learning Center on St. John (destroyed by Hurricane Irma), and an extension campus on St. Martin/St. Maarten. In 2017, the university received accreditation approval to offer online degrees. Starting in 2018, UVI began to offer 100 percent online courses and programs across 16 associate-bachelor-and-master level specialties. UVI often accepts students early and also participates in a dual-enrollment program whereby high school students can earn transferable college credits.

In addition to student degrees and programs, UVI is home to a number of research centers and specialty institutions, hosts the annual Paradise Jam NCAA Division I basketball tournament at the St. Thomas campus’ Sports and Fitness Center, and offers a variety of concerts and shows at the Reichhold Center for the Arts on St. Thomas.

UVI’s student demographics reflect its predominantly USVI attendance. Students from out-of-Territory accounted for roughly five percent of incoming students.

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freshmen for the 2017/2018 academic year, while international students made up only one percent. While all enrolled students must pay tuition, the university offers 100 percent tuition, room, and board scholarships to USVI valedictorians and salutatorians in addition to a variety of other scholarships and grants for which some students may be eligible. As with most public colleges and universities in the US, tuition is higher for out-of-Territory students than residents.

The average SAT scores for incoming freshman at UVI are 481 on the evidence-based reading and writing sections and 441 on the math section. These fall below the nationwide averages of 488 on reading and writing and 508 on math. However, it must be noted that UVI has a 98 percent acceptance rate for applicants—far higher than many colleges and universities—which lowers the overall average test scores of applicants, but also translates to more opportunities for students to earn a college degree.

The university is accredited through the Middle States Commission for Higher Education, the Accreditation Commission for Education in Nursing, Inc., the Accreditation Council for Business Schools and Programs, and the National Council for Accreditation of Teacher Education. UVI is also authorized to offer online programs and degrees in all 50 US states and the District of Columbia through its membership in the National Council for State Authorization Reciprocity Agreements. A 17-member Board of Trustees governs UVI. Under Title 17, Chapters 33 and 25 of the Virgin Islands Code, the Board is responsible both for general management and control of the university’s affairs and its Fund.

UVI is funded by: a portion of the Territory’s general fund; tuition and fees; public and private grants and contracts; investments; service contracts; and private gifts, donations, and endowments.

**IMPACT OF THE HURRICANES**

Hurricanes Irma and Maria damaged or destroyed significant portions of USVI’s educational infrastructure and affected the mental well-being of students, educators, and parents alike. With significant damage to all schools and university facilities following the hurricanes—more than 50 percent of schools reported damage—VIDOE and UVI leadership faced the challenge of operating minimally functional facilities. Specific hurdles included: lack of telephone service or reliable commercial electricity; added costs to run backup generators; reduced instructional support and service delivery due to capacity; loss of supplies, materials and equipment; and staffing shortages. Three schools in the Territory served as emergency shelters; of those, two remained shelters far beyond the anticipated timeframe because residents could not return to their damaged homes or secure temporary housing.

In the aftermath of the storms, VIDOE worked to assess the immediate educational community, to determine how school families fared through these storms, and to get facilities up and running as quickly as possible in order to resume instruction for K-12 schools. Many VIDOE schools and most private schools were able to resume instruction in early October—only a month

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after the storms. By mid-November, instruction had resumed for all students in the Territory, although for over 9,000 students, this was accomplished only by implementing double and/or split sessions or in temporary structures.

Based on a faculty survey conducted by the American Red Cross, the mental health of students remains a challenge in the USVI public schools as a result of the storms. While respondents typically stated students were coping well with school closures, part-time schedules, and the complete loss of after-school programs, more than 80 percent of teachers across St. Thomas and St. Croix reported difficulties engaging with students and problems with student morale.

Impact on students

In addition to emotional trauma, students in the USVI faced tangible struggles following the catastrophic September 2017 hurricanes. Nearly all students—public and private alike—lost belongings and clothing to storm or water damage. More significantly, a high number of students were displaced or living in storm-damaged homes. As a result of the storms, a number of families either emigrated out of the Territory entirely or sent their children to stay with family or friends to continue their education in the mainland US. Many families lost employment, vehicles, homes—essentially everything—in the hurricanes.

The high percentage of students from LMI families in the USVI were at particular risk following the storms. Families reliant on programs such as SNAP (Supplemental Nutrition Assistance Program) struggled to purchase food and supplies following the storm, as power and Internet outages made it nearly impossible to use pre-loaded EBT cards. Students who rely on free in-school breakfast and lunch were of particular concern while schools were closed. In October, the USDA’s Food and Nutrition Service (FNS) approved flexibility to the School Lunch and Breakfast Programs so VIDOE could serve students regardless of which session they attended at split-session school sites. The special permission also included an exception for meeting the regular requirements to prepare specific foods—a near-impossibility given the storms’ disruption to imports and distribution.9

Impact on K-12: VIDOE public schools

VIDOE utilizes more than 3 million square feet of property, much of which suffered irreparable damage during the 2017 hurricanes. While some damage was immediately obvious, some was less evident and will continue to impact facilities over time. Aside from structural and equipment storm damage, some VIDOE facilities were looted, which impacted the normal operations of instructional

### Damage to USVI public K-12 educational facilities

<table>
<thead>
<tr>
<th>Percentage of school area damaged</th>
<th>Number of schools</th>
<th>Estimated cost of repair and reconstruction, $ millions*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>2</td>
<td>$1.5</td>
</tr>
<tr>
<td>20-40%</td>
<td>10</td>
<td>$112</td>
</tr>
<tr>
<td>40-60%</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>60-80%</td>
<td>13</td>
<td>$316</td>
</tr>
<tr>
<td>80-100%</td>
<td>4</td>
<td>$245</td>
</tr>
<tr>
<td>Not categorized</td>
<td>1</td>
<td>$1.3</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>$676</td>
</tr>
</tbody>
</table>

* Estimated cost includes resilience work
US Virgin Islands Department of Education (accessed on March 21, 2018)

sessions and required additional effort to get the Territory’s schools and facilities operational. The US Army Corps of Engineers (USACE), Federal Emergency Management Agency (FEMA), US Environmental Protection Agency (EPA), and VIDOE conducted Rapid Assessments and Site Evaluations for Category A & B emergency work estimated at close to $1.2 billion, although VIDOE requested an initial estimate of $750 million for emergency support from the federal government to help the USVI public education system recover.

In terms of impact on facilities, nearly every K-12 public school suffered damage. Of the school buildings deemed reparable, at least 30 are in need of permanent work, estimated at approximately $676 million including contingency and resilience efforts. More than half of the schools in the Territory reported that over 50 percent of their facilities are damaged, including leaks in roofs, flooding, structural damage, and broken windows.

At least five public schools are likely to meet the criteria for replacement and will need to be reconstructed. Of the five, Arthur A. Richards Junior High School on St. Croix and Addelita Cancryn Jr. High School on St. Thomas must be relocated and rebuilt outside their current flood zones. The estimated cost to complete these projects is more than $100 million.

Until these schools can be rebuilt, VIDOE is deploying temporary facilities. These temporary structures are slated for completion before the start of the fall 2018 semester and include 143 modular buildings and 37 sprung structures.

After the hurricanes, VIDOE’s administrative teams, VIDOE’s Maintenance Division and engineering team, and USACE conducted several assessments on VIDOE’s existing buildings and facilities. Cleaning contractors and landscapers have completed thorough cleanings of reopened campuses. Scopes of Work (SOW) and Project Worksheets (PWs) are being finalized by FEMA in conjunction with private consultants and VIDOE’s engineering team. The most significant challenges VIDOE continues to face are the scarcity of materials and Architect-Engineer Contractors, and slowed progress while addressing roof damage, which results in on going moisture and mold issues in some school facilities and non-instructional buildings.

**Impact on public education process**

Facilities damage caused substantial disruption to instruction. Following the hurricanes, VIDOE shuttered 12 school campuses across the Territory, eight on St. Croix and four on St. Thomas and St. John (see table: Long-term school closures after the hurricanes). The department then moved to provide some form of instruction and restore school sessions for the school-age population by relocating to temporary facilities and instituting a split calendar. The affected school populations continued on double or split sessions through the end of the 2017/2018 school year. The abbreviated schedules accommodated four hours of instruction instead of the regular 6.6 hours, and took place during two sessions: mornings 7:30 a.m.–11:30 a.m. and afternoons 12:30 p.m.–4:30 p.m. Additionally, the school year was extended to June 29. When possible, VIDOE kept students with the same teachers and placed them in locations near their original schools in an attempt to maintain some form of continuity.

In an effort to provide an environment to promote excellence in education for the 2018/2019 school year, all VIDOE schools must operate on a full-session basis. As of June 2018, VIDOE was in the process of ordering modular classrooms and sprung shelters to meet this essential need.

**Impact on K-12: Private and parochial schools**

Private and parochial schools in both districts suffered structural damage, as well as damage to infrastructure as a result of wind and water during the hurricanes. The hurricanes also destroyed instructional materials, books, and equipment, as well as furniture. Fortunately, in the days following the devastation, community and faith-based partners—including economic development companies (EDCs)—provided assistance in clearing debris from school grounds in an effort to ensure a safe environment for studies. Students, parents, and staff also worked feverishly, assisting with repairing and cleaning buildings and classrooms for the anticipated start of school, despite the lack of power or phone service.

Nearly every school saw a drop in enrollment following the hurricanes, although some students are likely to return and the initial numbers may reflect the difficulty of ensuring clear communication to parents or accessing
The number of students each school lost varies widely: for example, Antilles School reported a drop of nearly 200 students between the first day of classes and its reopening after Maria, while All Saints Cathedral School lost 28 students.

Donations of funds and generators assisted with the reopening of private schools for students who remained in the Territory, including some students from public schools. Thanks in large part to these joint efforts, several private schools were able to reopen within a week of Hurricane Maria (see table: Sampling of private school reopening dates after the 2017 hurricanes). Private schools able to reopen a week after Maria also had to contend with the ongoing Territory-wide curfew, and adjusted staff and student attendance hours accordingly.

Some schools have set up special hurricane relief funds or fundraisers to meet ongoing repair and construction needs, as well as to replace damaged materials and support increased need for financial aid. Schools will be working to repair, reinforce, and reconstruct damaged facilities over the course of summer 2018.

The storms' significant impact on the USVI economy also impacted families' ability to pay tuition during the 2017/2018 academic year. At least one private school, Gifft Hill School on St. John, took the additional step of waiving tuition for the 2017/2018 school year so as to ease the financial burden on as many families as possible following the September hurricanes. Other schools, such as the Montessori School on St. Thomas, revised their financial aid policies to reflect financial hardship as a result of the hurricanes.

### University of the Virgin Islands

UVI suffered damage to its facilities, including the main campuses, the Research and Technology Park (RTPark) on St. Croix, and the Virgin Islands Environmental Research Station on St. John.

The St. Thomas campus was severely damaged by Hurricane Irma, while the St. Croix campus was hit hard by Hurricane Maria. All buildings incurred some level of water damage, broken ceilings, damage to internal and external lighting, security cameras,

<table>
<thead>
<tr>
<th>District</th>
<th>Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Croix</td>
<td>Pearl B. Larsen Elementary School</td>
</tr>
<tr>
<td></td>
<td>Lew Muckle Elementary School</td>
</tr>
<tr>
<td></td>
<td>Alfredo Andrews Elementary School</td>
</tr>
<tr>
<td></td>
<td>Eulalie Rivera Elementary School</td>
</tr>
<tr>
<td></td>
<td>Alexander Henderson Elementary School</td>
</tr>
<tr>
<td></td>
<td>Elena Christian Jr. High School</td>
</tr>
<tr>
<td></td>
<td>John Woodson Jr. High School</td>
</tr>
<tr>
<td></td>
<td>Arthur Richards Jr. High School</td>
</tr>
<tr>
<td>St. Thomas-St. John</td>
<td>Guy Benjamin Community Center</td>
</tr>
<tr>
<td></td>
<td>E. Benjamin Oliver Elementary School</td>
</tr>
<tr>
<td></td>
<td>Addelita Cancryn Jr. High School</td>
</tr>
<tr>
<td></td>
<td>Gladys Abraham Elementary School</td>
</tr>
</tbody>
</table>

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## Sampling of private school reopening dates after the 2017 hurricanes

<table>
<thead>
<tr>
<th>Island</th>
<th>School</th>
<th>2017/2018 year start</th>
<th>Reopening date</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Croix</td>
<td>AZ Academy</td>
<td>Wednesday, August 30</td>
<td>Monday, October 2</td>
</tr>
<tr>
<td></td>
<td>Good Hope Country Day School</td>
<td>Monday, August 28</td>
<td>Friday, September 29</td>
</tr>
<tr>
<td>St. John</td>
<td>Gifft Hill School</td>
<td>Tuesday, September 5</td>
<td>Monday, September 25</td>
</tr>
<tr>
<td>St. Thomas</td>
<td>Virgin Islands Montessori School &amp; Peter Gruber International Academy</td>
<td>Monday, August 21</td>
<td>Monday, September 25</td>
</tr>
<tr>
<td></td>
<td>Antilles School</td>
<td>Monday, August 28</td>
<td>Monday, September 25</td>
</tr>
<tr>
<td></td>
<td>All Saints Cathedral School</td>
<td>Monday, August 28</td>
<td>Wednesday, September 27</td>
</tr>
<tr>
<td></td>
<td>Saints Peter &amp; Paul Catholic School</td>
<td>Monday, August 21</td>
<td>Monday, October 2</td>
</tr>
</tbody>
</table>

technology equipment, rooftop solar panels, roads, and other infrastructure. As with the rest of the Territory, the campus greenery and trees were stripped or destroyed. Facilities that incurred the most damage included: Center for Marine and Environmental Studies (CMES); School of Business Building; Quarters B Administrative Building; West Hall Residence (largest dormitory housing 104 students); Reichhold Center for the Arts; Institute for Geocomputational Analysis and Statistics (GeoCAS) and Caribbean Green Technology Center (CGTC) Building; Faculty West Building; President’s Guest House; St. Croix Residence Hall; and UVI Research and Technology Park Building (College of Science and Math).

Classes resumed on October 9, a few weeks following Hurricane Maria, albeit with a noticeable impact on enrollment—350 of nearly 2,400 enrolled students did not return after the storms. The faculty, staff, and students of UVI demonstrated enormous resilience as the course schedule was redesigned, the calendar extended, and some courses moved online or to the weekends. Various buildings were repurposed and some faculty and staff had to operate without offices for an extended period of time.

The damage to UVI will cost an estimated $60 million to repair, including resilience measures. It is estimated that $23 million of the facility losses will be covered by insurance, and UVI is looking to the federal government and other funding sources to cover the remainder of the damage.

### Impact on student enrollment and employee retention

Enrollment levels fell across all parts of the education system. VIDOE’s student enrollment declined over 17.5 percent since Hurricanes Irma and Maria, from roughly 13,200 students before the storms to 10,900 students after (see chart: Public school enrollment, 2017-2018 school year). The department, however, expects these totals to increase for the 2018/2019 school year, bringing enrollment closer to pre-storm levels. Private and parochial schools experienced a noticeable decrease in enrollment as well, although the true extent of the changes will not be clear until the 2018/2019 school year begins. UVI lost 8.4 percent of its students, with enrollment going from 2,400 before the storms to 2,050 after. Of the 350 students who left, 210 withdrew immediately after the storms.

In the public school system, the hurricanes exacerbated existing problems with student retention and academic performance. Home displacement and lack of basic necessities like clothing, reliable transportation, nutrition, and emotional support amplified problems while schools remained closed in the weeks after the storms. To address the situation, VIDOE created a truancy team to seek out students who were not returning to school. In partnership with school security, attendance counsellors on the truancy team looked for students on weekends. When found, students usually returned to school within a day or two. The department also worked with students’ families. Schools worked with the VIDOE’s alternative education program, the St. Croix Community Foundation, and other organizations to provide support.
Retaining employees has become more challenging as well, especially for VIDOE. Coupled with the long-standing gap between the cost of living and salaries, the hurricanes burdened VIDOE with an additional 60 separations on top of the existing 77 vacancies across the Territory. UVI and the private and parochial schools retained most of their staff. UVI instructors who relocated continued to provide educational services to students through the online program.

**FUTURE CHALLENGES RESULTING FROM CLIMATE CHANGE**

In the future, education facilities will face mild to moderate risks from sea level rise, temperature increase, and changes in precipitation, while hurricanes, winds, rainfalls, and storm surge present moderate to severe risks. Hurricane and storm surge risks are of particular concern, as they can force education facilities to close for long periods of time. Consequently, this can put the Territory at risk of losing families to relocation. VIDOE facilities at particularly high risk include Addelita Cancryn Jr. High School on St. Thomas and Arthur A. Richards Jr. High School on St. Croix. Climate risk analysis was not conducted for UVI facilities.

### Hurricane winds, rainfall, and storm surge

Hurricanes and their related winds, rainfall, and storm surge present the biggest risk to education facilities. Category 2 or higher hurricanes will cause wind damage to facilities. At particular risk are facilities of a certain type of construction like high rib; these include facilities such as Eulalie Rivera Elementary School, where at least one building has high rib exterior walls. Storm surge caused by hurricanes or related tsunamis will impact coastal facilities. At particular risk are facilities below the 80-foot mark for tsunamis; these include: Charlotte Amalie and Ivanna E. Kean High Schools, Addelita Cancryn Jr. High School, Ulla Muller, Leonard Dober, and Gladys Abraham Elementary Schools, Julius Sprauve and Guy Benjamin Elementary Schools.

### Public school enrollment, 2017-2018 school year

**Thousands of students**

<table>
<thead>
<tr>
<th></th>
<th>Pre-hurricane</th>
<th>Post-hurricane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total enrollment</td>
<td>13.2</td>
<td>10.9</td>
</tr>
<tr>
<td>St. Croix District</td>
<td>6.3</td>
<td>5.3</td>
</tr>
<tr>
<td>St. Thomas-St. John District</td>
<td>6.9</td>
<td>5.6</td>
</tr>
</tbody>
</table>
EDUCATION

Schools (St. John), Juanita Gardine and Pearl B. Larsen Elementary Schools, Arthur A. Richards Jr. High School, Adult Education, and Headquarters. Should these facilities be flooded by storm surge, the buildings and grounds would suffer moderate damage to complete destruction and require lengthy repairs. Finally, the heavy rainfall associated with hurricanes will overflow drains, gutters, and water-ways, resulting in flooding and potentially causing the closure of classrooms and offices.

Rising sea levels

While some VIDOE education facilities are already located on elevated ground, some are near the coastline and therefore at risk of flooding and water damage as a result of rising sea levels. Facilities near the coastline include: Leonard Dober, Jane E. Tuitt, and Lockhart Elementary Schools on St. Thomas, Guy Benjamin and Julius Sprauve Elementary Schools on St. John, and Adult Education on St. Croix. These facilities may be impacted by soil and sediment erosion and flooding during storms, hurricanes, and tsunamis.

Other facilities that are at particular risk because of guts and swales running through the campuses include Joseph Gomez and Sibilly Elementary Schools and Charlotte Amalie High School on St. Thomas, and Juanita Gardine Elementary School and Adult Education on St. Croix.

Increases in temperature

As temperatures increase, facilities with air conditioning units will need more frequent maintenance and repair as a result of increased usage, as well as the strain caused by frequent power outages and surges. The cost of purchasing additional AC units and fans, as well as the electricity to operate them, will increase operating costs. This will affect most VIDOE facilities as most have some form of air conditioning on the premises. Some facilities have air conditioning only in certain rooms, while the other areas utilize fans and natural breezes. Few VIDOE facilities have total air conditioning, including district offices.

Changes in precipitation

Decreases in overall rainfall present a moderate risk. All of VIDOE’s facilities currently rely on WAPA water supply; however, a few school sites have cisterns, which permit switching over to collected rainwater during low water pressure. The facilities with cistern redundancies may be able to rely on the cisterns less than in the past.
INITIATIVES FOR INCREASING RESILIENCE IN EDUCATION

Strategies to make the education system more resilient include strengthening the existing infrastructure, better preparing for the consequences of future storms, and expanding opportunities for the Territory’s students. As K-12 and university segments are run separately by two different organizations—VIDOE and UVI—the initiatives for these two parts of the education system are labeled by organization for clarity.

PREPARE FOR FUTURE STORMS

Initiative 1 | VIDO

Develop a standard operating plan and procedures (SOP) for disasters

Current protocols and planning efforts proved insufficient in the face of Hurricanes Irma and Maria in 2017, and plans must be developed that take into account the increased severity of natural disasters. VIDO will work with the GVI and VITEMA to write and implement a best practices standard operating plan and procedures (SOP) for responding to natural disasters (including pre- and post-hurricane measures, as well as measures for tsunamis and/or earthquakes). VIDO will identify implementable preventive measures, such as clearing drains, gutters, and waterways susceptible to flooding, and placing sandbags at facilities to protect against flooding before future events, and outline how these measures will be carried out in the time leading up to a potential natural disaster. This information will be developed at VIDO and disseminated in every district and at every level. Where applicable, VIDO can aid the effort of other Territory schools, including private and parochial, by sharing plans. As part of the SOP, VIDO will also establish a communications plan for faculty, teachers, students, and their families that will be implemented in a disaster scenario.

Initiative 2 | VIDO

Identify best practices for resilience and disaster training for all stakeholders and develop a formal system of training

VIDOE will coordinate with VITEMA and other experts to identify and implement best practices for resilience and disaster training for all stakeholders. VIDO will develop a training and drill methodology that includes regular information sharing and practice. The key to making sure that disaster planning is effective in the event of another storm is ensuring stakeholders at all levels have access to information and know which procedures to follow at what time.
Additionally, VIDOE will develop a formal training system that is conducted upon hiring and refreshed annually in advance of hurricane season. Employees of VIDOE must certify that they have completed their disaster preparedness training and understand the processes and procedures that must be followed in the event of a natural disaster. In addition to a general training, VIDOE will provide additional training for personnel depending on their employment level and management responsibilities.

Initiative 3 | VIDOE
Partner with federal-level Department of Education emergency grant programs

The USVI can utilize School Emergency Response to Violence (SERV) funds to cope with the immediate aftermath of a natural disaster. The US Department of Education (DE) established Project SERV grants to help schools and districts cope with a disaster event that causes a significant disruption to educational instruction. Funds can be used to pay overtime for teachers and staff, substitute staff, counselors and mental health professionals, emergency transportation, and other services. Although a small portion of the overall recovery effort, DE-level grants can help restore the learning environment after a catastrophic event. VIDOE will work with DE to obtain funds under the SERV program.

Initiative 4 | VIDOE
Foster independence of power resources through diversification

VIDOE will explore grants for the purchase and installation of solar panels with collaborative partners in order to lessen VIDOE’s financial burden and reliance on WAPA for commercial electricity. Likewise, VIDOE will take local knowledge into consideration as it plans new buildings to maximize use of breezes and location for natural cooling. The department will also undertake an internal education program to raise awareness about energy conservation practices and how to implement them in schools and VIDOE facilities.

Initiative 5 | VIDOE
Upgrade schools to emergency shelter standards

VIDOE schools and buildings served as provisional emergency shelters, even though they at times did not meet emergency shelter standards. Shelters were required to remain open to accommodate individuals and families whose homes were destroyed or made uninhabitable by Hurricanes Irma or Maria, and the lack of alternative sheltering resources in the Territory delayed the re-opening of schools by up to one month. Through CDBG-DR funds, VIDOE can harden and upgrade schools to sheltering standards in order to serve as emergency shelters while other permanent shelters are built to serve the community in times of emergency.

FUNDING NEEDS

VIDOE and UVI have identified emergency repair needs of $112 million, with permanent reconstruction and additional resilience and mitigation needs totaling $793 million. As of April 21, 2018, VIDOE had submitted $55.6 million in projects to FEMA-PA, of which $1 million has been obligated. VIDOE also submitted hazard mitigation projects for HMGP 56 US Virgin Islands Department of Education. VIDOE will also pursue several other potential funding sources, including the US Department of the Interior’s Office of Insular Affairs, the USDA’s Rural Development programs, and the US Department of Education’s Pell Grant and charter school programs. Other sources of funding for education infrastructure will be continuously monitored and unmet need will be updated accordingly to ensure no duplication of benefits.¹⁴

**Initiative 6 | VIDOE**

Decrease dependence on fossil fuels and the local power grid by installing alternative energy power systems

In an effort to mitigate the cost of commercial power, as well as the university’s reliance on fossil fuels, UVI has issued an RFP for the development, construction, and operation of two off-grid systems on its St. Thomas and St. Croix campuses. The solutions will be compact and will reduce the university’s energy costs by 40 to 60 percent overall. This initiative will create approximately 10 full-time and five part-time new jobs and cost an estimated $12 million for purchase and implement.

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**Initiative 7 | UVI**

Harden and reinforce designated university spaces to use as shelters

The university will use its best efforts to harden existing structures, including cafeterias, residence halls, and classrooms that also serve as shelters during times of emergencies. UVI will further ensure all in-progress and future structures are built to meet the most up-to-date building code and disaster resilience standards to ensure safe haven during and after emergencies.

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**HARDEN AND REBUILD**

**Initiative 8 | VIDOE**

Construct all VIDOE facilities to meet new building codes and harden existing structures

VIDOE will renovate and update damaged facilities and take retrofitting measures where they are needed to reinforce structures. VIDOE will consult with the Department of Planning and Natural Resources (DPNR) to address increased code compliance and meet heightened standards for all facilities. VIDOE will also replace non-instructional facilities on St. Thomas and St. John.

**Initiative 9 | VIDOE**

Solicit services for temporary facilities and permanent repairs by utilizing FEMA-PA funding

VIDOE will collaborate with FEMA and the engineering consulting company AECOM to identify sites for modular structures and sprung shelters while permanent repairs and rebuilding are in progress in the aftermath of the storms. Modular structures for the 2018/2019 school year are to replace damaged classrooms at 22 of 26 instructional sites. Sprung structures will replace administrative buildings, gymnasiums, kitchens, and cafeterias for the 2018/2019 academic year while the rebuilding of damaged facilities is under way. The estimated cost to purchase and construct the modular and sprung structures totals $24 million.

**Initiative 10 | UVI**

Deploy UVI Restoration and Reconstruction Plan to rebuild and harden damaged university infrastructure

UVI has developed a comprehensive plan to rebuild post-Hurricanes Irma and Maria in the form of a Restoration and Reconstruction Plan. The plan addresses resilience, climate risks, mitigation of future risks, hardening, and rebuilding UVI to adhere to the most recent building codes. All work will be conducted in a manner consistent with these guidelines.

The facilities to be rebuilt belong to six categories: academic buildings, dormitory buildings, administrative offices, research buildings, services and facilities buildings, and residences. Restoration costs include mold removal, restoration, resilience improvements, mitigation improvements, fixtures, furnishing, and equipment. Comprehensive damage assessment reports were completed by the Bourne Group for the St. Thomas campus and by RMD Consulting for the St. Croix campus. Restoration and reconstruction needs are estimated at $46.6 million for St. Thomas and $7.3 million for St. Croix. An additional $5 million is estimated for the restoration of the RTPark Building.
Restoration and reconstruction costs would be covered by insurance proceeds and FEMA funding. UVI has submitted the requisite documents to FEMA and will continue to work with the agency to fill the insurance shortfall. The university will also seek federal funding for the construction of new facilities that is available as part of the disaster relief funds available to the Territory, such as from CDBG-DR and others. UVI will also seek other funding opportunities and collaborations, as applicable.

**Initiative 11 | UVI**

**Construct hardened Multipurpose Complex and Student Center/ Emergency Shelters on St. Croix and St. Thomas**

This dual-purpose center and shelter on the St. Thomas campus will be the hub of student activities and will serve as a hardened emergency shelter for students, faculty, staff, and the community. It will include a campus store, a computer and study lounge, small shops and eateries, and games and recreation areas. The St. Thomas facility will create approximately five full-time and 10 part-time new jobs and will cost an estimated $10 million to develop and build.

The St. Croix Multipurpose Complex and Emergency Shelter will provide indoor assembly and sporting spaces with associated rooms. This Multipurpose Complex will create an opportunity for St. Croix to attract and host high-profile sporting and other events, boosting the local economy. It will also serve as a hardened emergency shelter during natural disasters. The St. Croix facility will create approximately 10 full-time and 15 part-time new jobs and cost an estimated $30 million.

The university needs funding to harden other existing structures, including cafeterias, residence halls, and classrooms that also serve as shelters during times of emergency. UVI will further ensure that all in-progress and future structures are built to meet the most up-to-date building code and disaster resilience standards to ensure safe haven during and after emergencies.

**CREATE OPPORTUNITIES FOR STUDENTS**

**Initiative 12 | VIDOE**

**Increase opportunities for certified Career & Technical students**

In collaboration with the Department of Labor (DOL), VIDOE will institute academies to support workforce demands and stimulate local economic growth as a long-term resilience strategy. Certified Career & Technical (CTEC) students will explore new industries and develop business opportunities in support of a more resilient and diverse local economy. This initiative will require at least 10 new skilled instructors and curriculum development.

**Initiative 13 | VIDOE**

**Reestablish and grow farm-to-school initiative**

VIDOE will reestablish and grow a farm-to-school program by partnering with local farmers to grow fruits and vegetables to supply school kitchens and nearby residents with nutritious and fresh food. This may include partnering with UVI’s agricultural programs, the Territory’s Organic Community-Supported Agriculture (CSA) program, as well as community farming organizations. For example, Farm-to-School Program has begun with limited deliveries of fresh vegetables from the Farmers Cooperative, and farmers have been given menus for 2018/2019 school year to facilitate scheduling of crops to be planted for delivery during the school year. Separately, VIDOE will seek to educate students about food and healthy eating through instruction; VIDOE is including the availability of part-time instructors and apprenticeships for students in its negotiations with contractors as part of this initiative.
Initiative 14 | UVI

Establish the Salt River Oceanic and Atmospheric Research and Education Center on St. Croix

The Salt River Oceanic and Atmospheric Research and Education Center facility will consist of a 59,000 sq. ft. campus marine research facility on eight acres of land. It will be an advanced research center for the study of climate change, run in collaboration with National Oceanic and Atmospheric Agency (NOAA) and other sea-grant, space-grant, and land-grant institutions.

In the future, this center will provide up-to-the-minute and relevant oceanic and atmospheric climate change data to the Territory in preparation for imminent disasters, and will support the planning and mitigation efforts of VITEMA and other local emergency response agencies and personnel for possible disasters. This facility will create approximately 10 full-time and five part-time new jobs and cost an estimated $15 million.

Initiative 15 | UVI

Increase Territory-wide sustainability capacity and readiness by establishing a Center for Resilience and Sustainability on St. Thomas

This center will serve as a central coordination point for the research and practice of resilience and sustainability in areas germane to emergency and disaster preparedness, emergency and disaster management and mitigation, risk management and mitigation, and advanced planning of sustainable neighborhoods and economies. It will harness the many resilience assets available at UVI and offer a curriculum in resilience and sustainability leadership.

The goal of the center will be to better position the USVI and attendees from other areas to weather financial, social, physical, psychological, and other challenges resulting from natural disasters. The center will operate as a “think tank” for new and enduring approaches to resilience and sustainability, and increase the resilience and sustainability knowledge, skills, and expertise of the Territory. This center will create approximately eight full-time and four part-time new jobs and cost an estimated $3 million.

Initiative 16 | UVI

Increase opportunities for US Virgin Islanders to participate in economic growth and sustainability by establishing Entrepreneurship Community Centers on St. Thomas and St. Croix

The Entrepreneurship Community Centers will serve as incubators and accelerators for disruptive inventions and entrepreneurial activities. US Virgin Islanders will have the opportunity to explore and develop new technologies and business opportunities in support of the local economy. Researchers from top institutions around the nation and the world will be invited to compete for disruptive technologies patents that will be jointly held by the university. The university’s RTPark will also be linked to these centers. These centers will create approximately 20 full-time and 10 part-time new jobs and cost an estimated $14 million.

Initiative 17 | UVI

Advance aquaponics and hydroponics commercialization via the UVI Agriculture Experiment Station

The St. Croix Aquaponics and Hydroponics Center will offer sustainable organic food production and farmers’ market facilities. This center will utilize UVI’s proven state-of-the-art vertical hydroponics, aquaponics, and aeroponics food production systems, supported by climate control and renewable energy systems. The center will also include space for exploration and discovery in collaboration with the Caribbean Green Technology Center. This center will create approximately 100 new full-time or 200 part-time jobs and will cost an estimated $25 million to develop and launch.

The center will be a readily available in-Territory food source capable of operating and producing food in emergency situations, and it will increase the self-sufficiency of the Territory. A green technology-driven food producing plant will result in lower food production and import costs, lower water usage, less waste, fresher food, and more jobs.
Initiative 18 | UVI

Complete the School of Medicine and Simulation Center on St. Thomas and St. Croix and make them operational

The School of Medicine will be a teaching and research division of the university, accredited by the Liaison Committee on Medical Education (LCME), which is the US DE-recognized accrediting body for medical degrees in the United States. It will provide medical education for a diverse group of students and engage in research in infectious diseases and public health. With the aim of producing future physicians for the Territory, the School of Medicine will also align itself with the health care sector by, for example, aligning the reconstruction of Territory hospitals with the medical school so the hospitals can become teaching hospitals. The School of Medicine will create approximately 75 new full-time and 50 part-time jobs and cost an estimated $60 million.

Initiative 19 | UVI

Upgrade School of Nursing building on St. Croix

The School of Nursing is currently housed in temporary facilities on the St. Croix campus. These modular buildings were constructed nearly 20 years ago and have outlived their usefulness. In addition, in order to help meet the need for nurses in the Territory and boost enrollment and graduation of more nurses, UVI must provide a building that has simulation rooms and equipment that will help satisfy the clinical requirements for graduation. This facility would not only allow the university to modernize its nursing operation, but would help attract quality faculty and students to the program.

Initiative 20 | UVI

Establish Marine Science Vocational Educational Facility

The university has one of the best-known Marine Science programs in the nation. However, its focus is on degree-seeking students who enter the workplace at a very high level. In addition to those students, the USVI needs individuals who can provide basic services to the marine industry, like repairing marine engines and boats. A Marine Science vocational facility could train such individuals and could also eventually provide vocational training to students who want to engage in computer repairs and provide customer service in hospitality and business.