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Development and Financing of a Multipurpose Sports Facility

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Summary/Abstract

The Virgin Island Olympic Committee (VIOC) is a very small NOC located in the US Virgin Islands, an unincorporated territory of the United States. The VIOC consists of one full time employee, a volunteer executive board, and additional volunteers as needed.

Sports are a vital component of life in the Virgin Islands but one of the biggest challenges to the development of national teams is the lack of adequate facilities. As such, the VIOC seeks to build a home for some of the national sports especially the most popular sports of basketball and volleyball. Considering the lack of resources, the NOC is cognizant that this facility must be a multi-purpose facility and a collaboration with the Federal Emergency Management Agency (FEMA) to offer a safe shelter would be a win/win solution.

The Virgin Islands Government has plans to develop a sports complex on the eastern end of St. Thomas with multiple outdoor fields and have agreed to locate the VIOC multipurpose indoor facility there. Additionally, the Virgin Island Territorial Emergency Management Agency (VITEMA) has submitted an application, on behalf of the VIOC, to FEMA for federal funding of this project. The Virgin Islands Government, through legislation sponsored by Senator Donna Frett-Gregory, has passed legislation allocating $2M to the VIOC earmarked for this project for matching funds or any like purpose or need. This allocation demonstrated to FEMA the importance of the project and the willingness to put skin in the game. Interviews were conducted with 10 individuals to provide a greater understanding of the project's feasibility and support. The one major concern highlighted in the interviews and by FEMA in response to the application is that the main road into the property lies within a flood plain which is unacceptable for the purposes of an emergency shelter. As such, the critical path and major remaining hurdle for the project is finding a resolution for the issue with the access road. Currently, alternate access roads are being vetted. If there is not an alternate that is discovered/possible, the next option would be to request legislation to construct a new road or, as a last resort, relocate the site for the facility to another plot of land owned by the Government of the Virgin Islands.

To date, VITEMA has submitted a request to the Virgin Islands Housing Finance Authority (HFA) to include an access road for this project in the plans being finalizing for their own development adjacent to the Sports Complex location. The written request was submitted on March14, 2023 following several conversations on the matter. Follow up letters were submitted to the Director of the HFA in July 2023 from both the VIOC and the Legislature of the Virgin Islands.

Once all approvals have been received a Request for Proposal (RFP) will be developed based on RFPs from similar facilities. A few entities have promised to share their RFPs but none have been received to date. The VIOC is confident that they will be received prior to when needed to create the RFP. The RFP will be sent to a list of design build and

Engineering, Procurement, and Construction (EPC) companies. The RFP will be created by a project team assembled by the VINOC and Chaired by the Treasurer.

A second concern identified was the cost of operations once the facility is built. Interviews with individuals familiar with the operation of similar facilities indicate that the proposed dome structure, by nature of its design, is very energy efficient. As such, LEED Certification will not be a requirement of the project but would be rewarded in the evaluation process. This is the case because if made a requirement, bids that deserve to be considered would be voided for non-compliance with the RFP even if the data presented indicate low energy costs by design. However, energy efficiency will be a requirement and bidders will be required to provide energy usage projections.

Résumé

Le Comité olympique des îles Vierges (VIOC) est un très petit CNO situé dans les îles Vierges américaines, un territoire non incorporé des États-Unis. Le VIOC est composé d'un employé à temps plein, d'un conseil d'administration bénévole et de bénévoles supplémentaires selon les besoins.

Le sport est une composante essentielle de la vie dans les îles Vierges, mais l'un des plus grands défis au développement des équipes nationales est le manque d'installations adéquates. C'est pourquoi le VIOC cherche à construire un foyer pour certains des sports nationaux, en particulier les sports les plus populaires que sont le basket-ball et le volley-ball. Compte tenu du manque de ressources, le CNO est conscient que cette installation doit être polyvalente et qu'une collaboration avec l'Agence fédérale de gestion des urgences (FEMA) pour offrir un abri sûr serait une solution gagnant-gagnant.

Le gouvernement des Iles Vierges a prévu de développer un complexe sportif à l'extrémité est de St. Thomas avec plusieurs terrains extérieurs et a accepté d'y installer l'installation intérieure polyvalente du VIOC. En outre, l'Agence territoriale de gestion des urgences des îles Vierges (VITEMA) a soumis une demande, au nom du VIOC, à la FEMA pour le financement fédéral de ce projet. Le gouvernement des îles Vierges, par le biais d'une loi parrainée par la sénatrice Donna Frett-Gregory, a adopté une loi allouant 2 millions de dollars à la VIOC, réservés à ce projet pour des fonds de contrepartie ou tout autre objectif ou besoin similaire. Cette allocation a démontré à la FEMA l'importance du projet et la volonté d'y participer. Des entretiens ont été menés avec 10 personnes pour mieux comprendre la faisabilité et le soutien du projet. Le principal problème mis en évidence lors des entretiens et par la FEMA en réponse à la demande est que la route principale menant à la propriété se trouve dans une plaine inondable, ce qui est inacceptable pour les besoins d'un abri d'urgence. Ainsi, le chemin critique et le principal obstacle qui subsiste pour le projet consistent à trouver une solution au problème de la route d'accès. Actuellement, d'autres voies d'accès sont à l'étude. Si aucune alternative n'est découverte/possible, l'option suivante consisterait à demander une législation pour construire une nouvelle route ou, en dernier recours, à déplacer le site de l'installation sur une autre parcelle de terrain appartenant au gouvernement des îles Vierges.

À ce jour, VITEMA a demandé à la Virgin Islands Housing Finance Authority (HFA) d'inclure une route d'accès pour ce projet dans les plans en cours de finalisation pour leur propre développement adjacent à l'emplacement du complexe sportif. La demande écrite a été soumise le 14 mars 2023 à la suite de plusieurs conversations sur le sujet. Des lettres de suivi ont été soumises au directeur de la HFA en juillet 2023, émanant à la fois du VIOC et de la législature des îles Vierges.

Une fois toutes les approbations reçues, une demande de proposition (RFP) sera élaborée sur la base des RFP d'installations similaires. Quelques entités ont promis de partager leurs demandes de propositions, mais aucune n'a été reçue à ce jour. Le VIOC est confiant dans le fait qu'ils seront reçus avant la date nécessaire à l'élaboration de l'appel d'offres. L'appel d'offres sera envoyé à une liste de sociétés de conception-construction et d'ingénierie, d'approvisionnement et de construction (EPC). L'appel d'offres sera créé par une équipe de projet assemblée par le VINOC et présidée par le trésorier.

Le coût des opérations une fois l'installation construite a été une deuxième préoccupation. Des entretiens avec des personnes familières avec l'exploitation d'installations similaires indiquent que la structure du dôme proposé, de par sa conception, est très économe en énergie. En tant que telle, la certification LEED ne sera pas une exigence du projet mais sera récompensée dans le cadre du processus d'évaluation. En effet, si elle était exigée, les offres qui méritent d'être prises en considération seraient annulées pour non-conformité à l'appel d'offres, même si les données présentées indiquent de faibles coûts énergétiques de par leur conception. Toutefois, l'efficacité énergétique sera une exigence et les soumissionnaires devront fournir des projections d'utilisation de l'énergie.

Introduction

The US Virgin Islands is an archipelago with a population of approximately 100,000, consisting of three main islands, St. Thomas, St. Croix, and St. John. Currently, there are no dedicated facilities for training for the National Teams. There are ongoing efforts to secure facilities from the local University and both Public and Private schools, but availability is either scarce or cost prohibitive. Additionally, players must travel from one island to another as the national teams always have inclusive participation from all three of the islands. This past summer the national volleyball team played in two tournaments in a relatively short window in the mainland US. Because of the cost of travel, it became economically advantageous to have the team remain in the US and find a facility to practice. This extended period of time together - proved to be very fruitful as they won the second tournament. This recent success with the National Volleyball Team was attributed to a lengthy training facility being secured in the US mainland but that model is also cost prohibitive and not sustainable under normal conditions. With that said, it demonstrated what the potential could be with a dedicated training facility.

Furthermore, one of the risks of living in the Caribbean is exposure to hurricanes. On average, a hurricane passes near the US Virgin Islands every three years with a direct hit occurring, on average, every 8 years. The Virgin Islands have experienced 13 hurricanes in the later part of the 20th century into the early 21st century with the peak hurricane season being that of 2017. Some attribute this increase in activity and intensity of storms to global warming. Additionally, though not quite as frequently, there is exposure to seismic activity and historically there was a Tsunami in 1867 so the possibility cannot be ruled out. In 2017 the Virgin Islands was hit by two category 5 hurricanes in two weeks. Hurricane Irma, the first of the two in 2017, being the strongest Atlantic forming hurricane ever recorded. The impact of these hurricanes was devastating in every sense. Schools, homes, and government buildings were all lost, and hurricane shelters/safe rooms were severely impacted. Some shelters were destroyed beyond repair, and some were deemed not in compliance with the new FEMA standards. Prior to 2017, the Federal Emergency Management Agency (FEMA) offered relief in the form of Hazzard Mitigation Funds. These funds allowed for infrastructure to be rebuilt to the prior condition after being damaged by a storm that received a disaster declaration. However, after the storms in 2017, there was a change in this approach and FEMA now requires facilities to be built to increased standards.

The basic rule reads as follows: If the cost of improvement or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards (FEMA, 2021). Additionally, due to the amount of damage witnessed in the territory it was determined that there was a lack of hurricane shelters/safe rooms. A safe room is defined as a hardened structure specifically designed to meet the Federal Emergency management Agency (FEMA) criteria and provide near-absolute protection in extreme wind events, including tornadoes and hurricanes (FEMA, 2021). It goes further to describe near-absolute protection means that, based on our current knowledge of tornadoes and hurricanes, the occupants of a safe room built in

accordance with FEMA guidance will have a very high probability of being protected from injury or death. The standard, FEMA P-361, provides guidance from the Federal Emergency Management Agency (FEMA) about the planning, design, construction, and operation of safe rooms. FEMA recognizes that tornadoes and hurricanes are among some of the most destructive forces of nature. Unfortunately, these types of windstorms continue to cause injury and death to people who are unable to safely evacuate or find shelter from these events (FEMA, 2021). As such, it has been publicly stated that there is a deficiency in hurricane shelters and the need for new facilities that meets the guidelines exists. These factors, coupled with experiencing two Category 5 hurricanes in 2 weeks, has made hurricane shelters a priority for the Federal Emergency Management Agency (FEMA). Furthermore, the high cost of energy requires that shelters are constructed in a sustainable manner.

St. Croix is 84 square miles, St. Thomas is 32 square miles, and St. John is 17.7 square miles. At a size of just under 134 square miles, collaborative efforts, in this case in the form of a multi-purpose facility, is the most prudent. When discussions are held about natural resources there is always the reminder that land availability is one of the more precious natural resources in need of protection.

The goal of this project is to determine the feasibility, level of interest, and the identification of potential funding sources for a multi-use facility that could serve both sport teams and the general public as an emergency shelter.

Review of Existing Knowledge

In researching the most common ways to build a sports facility, a unique concept was discovered. It takes a village to build a sports facility (Greenberg et al., 2011). The sentiment is that it is a community effort as the benefits flow through all. In this case, while this sports facility would primarily be used to prepare the National Teams for competition, it also would serve many other purposes. While it promotes Nationalism, it also opens the door for other opportunities such as sports tourism. The cost of said facilities can be high so the search for available local and federal government funds, donations from private entities and individuals, and fund-raising efforts further enhance the village concept.

On an island, it is not only customary, but a necessity to maximize the use of property. Multi-use and multipurpose facilities are not only the norm, but they have also become the rule. In this case the first application of multi-purpose relates to the type of sports to be used by the facility. Even in much larger markets and in professional sports it has become imperative that multi-use sport facilities are utilized to properly manage resources and in turn be the catalyst for economic development (Kimble, 2019). In choosing the type of facility by sport it is important that there is a primary focus on indigenous sports as there is a relationship of sport to the formation and development of national identity (Beacom, 2009).

The other use for consideration, and of significant need, is that of a Community Safe Room or disaster shelter. FEMA has established guidance in this regard, FEMA – 361 Community Safe Room (Federal Emergency Management Agency, 2021). The standard provided in this guidance illustrates the specs required to achieve near absolute protection. According to FEMA, “near absolute protection means that based on our current knowledge of tornadoes and hurricanes, the occupants of a safe room built in accordance with FEMA guidance will have a high probability of being protected from injury or death.” This use of a facility is of more significance on the funding side as FEMA has partnered with local governments to fund both the construction and repair of similar facilities. According to a FEMA Disaster Coordinator, “Sports are an instrument of social development and family integration for groups of all ages and conditions, which translates to a better quality of life. We have assigned funds for thousands of projects that promote this type of activity, like parks, community centers, and different stadiums” (Balquero, 2021).

Six facilities, listed below, were identified through research that were funded in part or fully through FEMA grants.

- Lumberton, Texas – Lumberton Intermediate School – Fine Arts Center/Shelter – FEMA Grant of $3.9M (Pyper, 2022)
- Edna, Texas – Edna Independent School District (ISD) Victoria, Texas - Gymnasium and Storm Shelter – FEMA 75% Grant of $1.7M (Houston Fox 26)
- Starkville, Mississippi – Multipurpose facility and safe room – FEMA 87% Grant of $1.79M (Paton, 2017)

- Charleston, Mississippi – Multipurpose Safe Room – FEMA 90% Grant of $1.2M (Wicker, 2017)
- Archie, Missouri – Archie R-V School District – Sports Gymnasium and Tornado Shelter – FEMA Grant $1.0M (Bates County News Wire, 2012)
- San Juan, Puerto Rico – Eight Municipalities Receive Multimillion Dollars Assignment for Safe Rooms – FEMA Grants totalling $24.4M (FEMA, 2022)

In major US cities, new sports facilities are most often funded through a number of mechanisms ranging from public funding or private investment. Public funding typically comes from the residents or businesses through taxes or issuance of bonds (Kimble, 2019). Several of these municipal departments are not revenue generating but have capital intensive budgets. The most obvious but least likely way to increase the general fund of a municipality is to increase taxes. With that said, it is the most unlikely way as the political will to do so rarely exists. Even affluent communities push back against increased taxes. Creative means to fund projects have been implemented in several jurisdictions. The most traditional mechanism has been the floating of municipal bonds. When floating bonds the tax base or revenue projections must demonstrate an ability to service the debt. Another option utilized by cities is Tax Increment Financing (TIF). This is more common is areas where urban redevelopment exists. One creative option used to fund specific improvement projects in the state of Georgia is the Special Purpose Local Option Sales Tax (SPLOST). This is a means of raising funds for specific local or area projects.

In the case of the US Virgin Islands this type of creative financing could only be implemented if a form of sales tax was first implemented. As a result, the only true options available would be to identify a grant or a similar funding source or a large fundraising campaign. In this case, a facility that will primarily be used as the home for the National Teams and only secondarily be used as a revenue generator through sports tourism, this would be the best model. However, the possibility of providing the use for the National Teams along with the potential for sports tourism and then function as a safe house in the event the community is negatively impacted by a hurricane, tsunami, earthquake, or any other natural disaster common to this area, provides the opportunity for Federal funding through FEMA. This makes the Safe Room application extremely attractive. The reason behind the funding is the avoidance of loss of life coupled with the exposure of billions of dollars in damages. In 2017 the Virgin Islands were impacted by Hurricane Irma on September 6th and then Hurricane Maria two weeks later September 20th. Both made landfall as Category 5 hurricanes. Hurricane Irma had sustained winds of 180mph, 52 direct fatalities (82 indirect), and an estimated $77.16 Billion in damages.

In researching the types of structures that are FEMA P-361 compliant and could be used as a multipurpose facility, a specific construction type was identified (Ingergiola et al., 2012). Concrete dome structures appear to be very well suited to withstand extreme wind loads and the associated debris that accompany these catastrophic events (Zweifil et al., 2014). In fact, five of the six facilities previously listed that were in part FEMA funded were all dome structures. The indication is that public agencies are investing in the

development of community shelters as they are resilient structures and provide a place of refuge for citizens. Design and construction guidelines have been provided by FEMA in the publication Saferooms for Tornadoes and Hurricanes (FEMA, 2021).

It is stated that planning for Operation and Maintenance (O&M) in the sports facility should begin in the pre-design phase and extend through the design and construction phases (Rosandich, 1999). In this environment in the Virgin Islands, it is more critical than most other jurisdictions to not only plan O&M and additionally implement efficiency measures. Just about every location in the Virgin Islands is exposed to salt in the air and to some form of sea blast. These ambient conditions make it extremely important to have a thorough understanding of the impacts due to ambient conditions. In addition to O&M costs, utility rates in the Virgin Islands are 4 times the national average. These factors illustrate the importance of alternative sources of energy and proactive planning.

The FEMA process begins by first engaging the Virgin Islands Territorial Emergency Management Agency (VITEMA). VITEMA is the local agency in the Virgin Islands tasked with ensuring the territory's resilience to disasters. They are viewed as the local version to FEMA and many times act as the intermediate step to the federal agency. Once a request is submitted to VITEMA it is vetted. First to determine if it meets the requirement for assistance, and then to confirm if it falls under the jurisdiction of the territorial agency or if it should be referred to the federal entity, FEMA. This safe room project would fall under the federal entity, FEMA, but VITEMA would initiate the contact and would probably be tasked with the administration.

Based on the need of the Virgin Islands for an indoor sport facility as well as a safe shelter, the research question for this project is:

How does the VIOC collaborate with the VI Government and FEMA to build and finance a multi-purpose indoor facility to enhance sports development in the Virgin Islands?

Data Collection Strategy

The strategy to obtain the requisite data to produce the desired successful result is multi-faceted. It will be accomplished by the combination of secondary research and primary interviews. The secondary research is designed to access the relative information online and in print. The primary qualitative interviews are to gain the perspective of all influencers and stakeholders of the project as well as those that have information critical to the success of the project. The objective is to gather insights as to the desire and feasibility of building a sustainable multi-purpose sport facility in St. Thomas and to provide actionable recommendations on a path forward.

Secondary Research

The bulk of the research conducted was done via online search engines. Key words such as sports facilities, indoor, hurricane shelter, FEMA, sport facility, funding, and energy efficient were initially used. After the initial round of searching, additional search words like dome and multi-purpose became added to the search. Most of the searching was done via the University of Ottawa online engine and google scholar. These sources will be used for the additional information needed for the project.

Primary Interviews

Requests for interviews were sent to 10 individuals who were identified for (explain WHY these 10 people were identified? All 10 listed in Table 1 accepted and were interviewed.

Table 1: Interviews Conducted

Graciela Rivera	Territorial Hazard Mitigation Officer	Ms. Rivera is the officer in VITEMA assigned to this project. She is the interface between FEMA, the VI Government, and in turn the VIOC. Additionally, she is the resident expert on the funding for these types of projects
Commissioner Calvert White	Commissioner of Sports, Parks, and Recreation for the Government of the Virgin Islands	Commissioner White is the member of the Governor's Cabinet directly tasked with the construction and maintenance of sports facilities. His recommendation is required for Government land to be utilized for sporting facilities and he is the lead for the multi-sports complex being planned.

Senator Donna Frett-Gregory	Senator in the 35th Legislature of the Virgin Islands	Senator Frett-Gregory is the current chairperson of the Legislature's Committee on Finance, President of the Last Legislature, and the sponsor of the Legislation that provided $2M for the VIOC for the purpose of this project.
Mr. Zachary Filmore	President and Partner World Domes	Mr. Filmore and his firm operate on the architectural and design side of the resilient structure business as well as on the construction side. They are the builder of dome buildings, and he has extensive experience in the building of these types of facilities.
Mr. Peter Fedele	CEO of American Business Continuity Domes	Mr. Fedele is the vision and driving force behind ABC Domes. He is not only a dome developer, he is also an owner and operator. A general contractor by trade, he has built over a dozen safe and multipurpose facilities. Several of which have been funded by FEMA. He has specialized in disaster resistant commercial facilities and operates his business from one that he built over 10 years ago
Ms. Lucille Hobson	President of the Virgin Islands Volleyball Federation	Volleyball is one of the two major indoor sports in the Virgin Islands and will be utilizing this facility. Ms. Hobson is not only President of the local federation but is the General Secretary of the Virgin Islands Sports Commission.
Mr. Dean Adams	Vice-President St. Thomas Virgin Islands Basketball Federation	Basketball is also a major indoor sport that will call this facility home. The VI has produced elite basketball talent and competes with Team USA for retention of some of the talent.
Mr. Clinton Hedrington, P.E.	President and CEO SIMS Energy Consulting Group	Mr. Hedrington is a career energy professional and is highly regarded as one of the best in the territory. It is critical that the energy cost of this facility is managed as electricity remains one of the highest of overhead costs that exist.
Mr. Julio King	President of J.U.B. King & Associates	J.U.B. King is one of the more reputable architectural firms on St. Thomas. They are architects, contractors, developers, and consultants. They are very familiar with the FEMA requirements for

		shelters and with designing facilities in the Virgin Islands.
Mr. Denswell Hodge	Vice-President Apex Construction Company, Inc.	Apex Construction is one of the more reputable construction firms in the territory. They are one of about 3 firms that can meet the FEMA bonding requirements and have constructed just about every type of facility that exists in the territory.

To set up these semi-structured interviews, emails were sent to each targeted individual explaining the concept and asking for a 15-30 minute in-person or video call interview.

Part of the planning phase is the establishment of the "need." It was decided the best way to establish the need would be to interview those impacted by the absence of a dedicated facility. Basketball and volleyball are the most popular indoor sports and the ones that would primarily use the multi-purpose facility. These sports are considered to be grass-root sports in the Virgin Islands and Virgin Islanders have also performed at the highest of levels in these sports. Most recently, the Virgin Islands National Women's Basketball Team won the Gold Medal at the 2023 Central American and Caribbean Games located in San Salvador, El Salvador.

The guiding questions included:

All interviews began by thanking the participant, confirming that the interview would remain confidential, and the transcript would only be read by the researcher and the professors.

Interview Questions for FEMA and VITEMA

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. Would this project qualify for a FEMA Grant or FEMA funding?
3. Has FEMA funded these types of projects before in other jurisdictions?
4. Would this be a 100% funded project, or would a split be required?
5. If a split is required could the match come in the form of in-kind services?
6. Can you please describe the application process?
7. What is your expected timeline for this type of funding?
8. Can you describe procurement guidelines that would have to be followed?

9. Could features such as energy efficiency and renewable energy, such as solar, be included in the project cost?
10. Do you know of any issues that would prevent this project from being funded?

Interview Questions for the Commissioner of Sports, Parks, and Recreation

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. Does this project have the support of your agency and in turn the executive branch?
3. Can you describe the multi-sport complex being planned.
4. Is the VIOC Multi-purpose facility included in this plan? How much money is dedicated to the multi-purpose facility? Have you had any discussions with FEMA about supporting this project?
5. What do you view as your role in making this project a reality? Who within the government would be the person to coordinate with FEMA regarding financing of facility?
6. Are you willing to formally provide written support for this project.

Interview Questions for the Senator in the Virgin Islands Legislature

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. Does this project have your support?
3. Are you willing to sponsor legislation, if needed, to make this project come to fruition?
4. What do you view as your role in making this project a reality? Do you believe FEMA will provide financial support?
5. Are you willing to formally provide written support for this project.

Interview Questions for the Basketball and Volleyball Federations

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. What facility/facilities do you currently use to train the National Teams?
3. How does the lack of a dedicated facility impact the development of your sport?

4. What would having access to this facility do for the development of your sport?
5. Does this project have your support? Who do you believe should have priority to use the facility? What revenue streams could be generated from the venue?
6. Are you willing to formally provide written support for this project?

Interview Questions for the Architect

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. What is your role in the development of the multi-sport complex?
3. Do you believe the allocated land is adequate for this sports complex?
4. Are you familiar with the FEMA P-361 spec/standard for safe Rooms?
5. Do you see any conflict with these FEMA specs and the building codes in the Virgin Islands?

Interview Questions for the Energy Professional

1. Are you familiar with the VIOC Multipurpose Facility/Safe Room Project?

If no, proceed with a description of the project and then move to question #2.
If yes, proceed with question #2.

2. Do you believe this site can accommodate solar or other renewable energy?
3. Would this facility qualify for Federal Tax credits if green energy and/or energy efficiency certifications were achieved?

After completing the interviews, the data was transcribed with common themes and key concepts extracted.

Results and Findings

The ten interviews were conducted to a) establish need b) learn more about the steps required and possible challenges to secure approval and finances for the facility and c) understand how best to approach the design, building and maintenance of the facility once approval was granted. Eight of the 10 interviewees were familiar with the proposed project.

Establishing the Need

In the interview with the President of the Volleyball Federation, Ms. Lucille Hobson, described the difficulties in growing the sport of volleyball and attracting the best talent in the Virgin Islands. When asked during the interview what facilities the federation currently used for training, Ms Hobson responded that "we currently use the St. Croix Central High School Gym" and while she couldn't recall the name, she noted 2 facilities that were also used in the Orlando area. Team chemistry is important for success in every aspect of life. In a fortune 500 company goals cannot be met without synergy at the top and throughout the company. The same is the case for sports. When asked how the lack of a dedicated facility impacted the development of the sport, her response was "Central High had been very helpful and was the only facility on St. Croix that allowed use of their facility". She went on to detail how school functions like the prom and graduation would result in the need to cancel scheduled training. They have travelled abroad to the US mainland and have taken on the cost of having a training camp abroad. While those efforts have borne fruit in the form of championships and growth of the program, it not a sustainable model due to cost. During the interview, Ms. Hobson recommended we investigate potential siting of a dormitory in or adjacent to the sports complex. There has been much dialog about the pursuit of Sports Tourism. While hotels, Airbnb, and other types of lodging could be used, a dormitory would further enhance the ability to use the facility by teams from away as well as the need for the National Teams as they consist of players from all 3 of the Virgin Islands and those residing elsewhere.

Similar concepts were discovered in the interview with Dean Adams, Vice-President of the Virgin Islands Basketball Federation for the St. Thomas, and St. John district. He expressed the need for a home for the National Basketball Teams. When asked in the interview about the impact of not having a dedicated facility, he responded by saying "first of all, we cannot have any recurring training because we don't have some place that we can totally dedicate for specific days for training." His focus was more on the development of talent and training. Mr. Adams is interested in setting up training camps. In his words during the interview, "the big picture is to become more competitive because we have been bringing in instructors and we wouldn't have to pay extra money for a facility if there was one that was dedicated." Recurring training is the desire for the federation. He also complained of having to rent facilities abroad and/or only getting the high school gymnasium when available. He did, however, have a slightly different take on the availability of facilities. Because we are small islands, and the availability of land is scarce, any public facility would have high demand. Only a dedicated facility where the National Teams have priority would resolve this issue, from his perspective. He envisioned

scheduled timeslots for normal practice and a rotation of availability for camps or longer duration activities. Another focus was talent from the perspective of competition. The belief is there is a need to compete against the most talented teams. With a dedicated facility we can host tournaments more readily, invite some of the best in the region to scrimmage for a weekend, or do a deeper dive into the Sport Tourism market. Mr. Adams also cited the need for dormitories. He said that it would be easier to get teams to travel for a weekend or a longer stay if they could control the cost of lodging. There was also an interest in bringing in instructors. They have been reluctant to incur the expense of inviting instructors and not have a dedicated facility.

In the interview with Commissioner Calvert White, when asked about support from his office, and in turn the Executive Branch, he responded, “100%, right now the Olympic Committee oversees our national teams and federations and don’t have somewhere they can call home base.” He went on to speak about the proposed Sports Complex. “I have several roles as the Commissioner of the Department of Sports, Parks, and Recreation. One such role is to ensure there are funds appropriated for all of the sports to be located at the Complex.” Lastly, when asked if the project had his support, he responded “Absolutely, I think it’s a great project. It’s going to help the Virgin Islands and, as I said, it’s going to bring an additional inventory of facilities.

Determining the path forward to securing approval and financial support

According to Ms. Graciela Rivera, The Territorial Hazard Mitigation Officer with VITEMA and the Office of Recovery, the proposed facility would qualify for a FEMA Grant because VI is already in the Hazzard Mitigation program. She further shared, “That’s one of the things that made this project so attractive. FEMA had previously certified and approved the process and the type of building that we were looking at to be constructed.” When asked about the level of funding that could be expected, her response was, “we usually have the mitigation grant programs for disaster. You have to have a disaster declaration. All hazard mitigation type projects usually fund at 75% with a 25% share. In some instances, if the location, the state, the territory, or whatever the case maybe have economic challenges it can be 90/10. Now we did get, and this has only happened a handful of times, we did get for the mitigation program as a result of the disasters in 2017, we got 100% funding for Federal Funding.” Ms. Rivera confirmed that the matching fund portion of the split can be in the form of cash, in kind services, or a combination of both.

As far as procurement guidelines to be followed, Ms. Rivera said they are those of the government of the Virgin Islands or the agency, in this case the VIOC. If the agency’s procurement guidelines are selected, they would have to be reviewed to ensure it meets all of the key federal requirements. Since the Government guidelines are already written with the Federal requirements, the recommendation would be to use the procurement guidelines of the Government of the Virgin Islands. When she was asked if there were other locations that received Federal Funding for these types of facilities she said yes and provided a couple of articles demonstrating that this has taken place before.

A deeper dive was then taken on the application process. The application process begins with a notice of intent. In this case, the VIOC, in conjunction with VITEMA, produces a letter of intent for the proposed project in its entirety. This information includes the scope of the project, the purpose of the project, what mitigation activities would be resolved or assisted with the project, and some initial cost estimate. The Virgin Islands Territorial Emergency Agency worked with the VIOC to complete this document and it was submitted to FEMA for funding on March 22, 2023. A copy of this application is included in the appendix. FEMA has started the review process and has raised an initial concern about the access road being in the flood plain.

The last item discussed with Ms. Rivera was an attempt to get her perception of the project. Essentially, with everything submitted to date and initial review of documentation, was there any part of the project that gave her concern or could be perceived as a deal breaker. She indicated that there was one aspect of the project to be considered problematic. While the proposed location of the multipurpose facility is acceptable, the proposed access road lies in a flood plain. On behalf of the VIOC, VITEMA has already started the process to investigate an alternative access road to the project site. A government agency, The Housing Finance Authority, as well the Virgin Islands National Guard are adjacent to the proposed site for the sports complex. VITEMA has already requested access to the sports complex through both of their unused property but is focusing on the HFA. Formal communication has already been sent to them by Ms. Rivera on May 13, 2023, and the VIOC has received a copy. The office of Senator Donna Frett-Gregory has also requested and received a copy of the correspondence. Both the VIOC and the Senator sent formal correspondence to VITEMA on Thursday August 3rd 2023. Further investigation revealed that a third alternative exists. It is possible to build a new road in. This would be an extremely expensive option and could only be viable if sponsored by legislation. All options will be pursued, and it is expected that one of them will be made available.

After learning that the most pressing issue was that the proposed access road exists in the flood plain, it was prudent to interview Senator Donna Frett-Gregory. When first approached about this project, Senator Frett-Gregory was the President of the Legislature. In this current legislature she is the Chairperson of the Budget, Appropriations and Finance Committee and was the leading vote getter in the past three elections. Senator Gregory, known as an aggressive supporter of the people, has championed this project from the first time being approached. When asked, the senator indicated that she learned of the project during a Senate Hearing where the Virgin Islands Olympic Committee was testifying on the status of the movement. Such testimony is required because the VIOC receives an annual allotment from the Virgin Islands Government. In that testimony the VIOC revealed to the Legislature that VITEMA was approached about the project and that there may be a need to increase the annual allotment when the project is complete to fund the maintenance and upkeep of the facility. While the entire legislature appeared supportive of the measure via their comments, the Senator further indicated via the interview, “I immediately spot my interest, because, as you know, sports are near and dear to me. All of my sons are athletes. I have sons that have actually played division I basketball.” Immediately the Senator moved legislation in

September of 2022 that provided $2,000,000 for the project to demonstrate to the Federal Emergency Management Agency that the VI Government was very interested in the project, had skin in the game, and would be able to meet any matching fund needs. The Legislation has been reviewed and wording allows for the funds to exist until being expended. In other words, there is no expiration for the availability of the funds for the VIOC. This measure was received well by FEMA and has allowed the project to progress with the agency and receive due treatment.

The senator then asked for the status of the project and received a full briefing to include the concern about the access road. She offered to formally reach out to the local agencies that may be able to offer relief by allowing access and additionally indicated that she would be willing to move legislation in the regard to a new road if necessary. The Senator said during the interview, “the project is good for the community. Not only would it be good for the elite athlete, but also for any citizen that may need to shelter during a disaster.” She requested a breakdown of projected costs to maintain the facility, inclusive of the rent that would be saved from the current office, so that any needed increase in annual allotment could be addressed. She further indicated that she was supporting and is involved in the plans for the full sports complex and that she would seek the Governor’s involvement if needed. The interview concluded with the Senator making a statement that she was confident that this project would come to fruition and pledged her support throughout the process.

The conversation about the annual cost to maintain the facility led to a decision to take a deeper dive into the overhead costs of operating the facility. It was concluded that the largest cost to operate the facility would be the cost for electric energy. For several reasons the cost of electric energy in this region is among the highest in the world. One such reason is the fuel used to produce energy. A significant percentage of the region use oil to generate power.

To futher understand how to reduce operating costs, the decision was made to interview Mr. Clinton Hedrington, President of SIMS Energy Consulting Group. After describing the project to Mr. Hedrington, he was asked about the potential for this site to accommodate solar or any other renewable energy. He responded by saying, “Oh Yes, For Sure! Hands down, especially being on the eastern side of the island, you can face the panels southeast, it would be perfect.” He went further to say when asked about sustainability, “This could be accomplished with a combination of purchasing energy efficient fixtures, and to install a demand side load management system in the facility. Demand-side load management are technologies and systems that allow the consumer to optimise their energy use. A renewable energy installation would not only provide energy security via a stable energy profile, but the VIOC would also be able to generate savings via the Federal Tax Credits for renewable systems. The project would also qualify for energy efficiency certificates.” These findings in the interview with Mr. Hedrington were in line with and validated the direction recommended by the existing expertise.

Understand the next steps to design, build, and operating the facility.

The final exploration was for architects and/or construction companies that had experience building these types of multi-purpose facilities. All searches led to a joint venture that has built these types of structures that met the FEMA guidelines and built structures funded by FEMA. Additionally, FEMA appeared to be very comfortable with these types of groups and their ability to meet the required FEMA-361 guidelines given their performance in the past. Interviews were held with local architects as well as architects that have designed these types of facilities abroad. Additionally, interviews were held with local contractors as well as developers and contractors that have built these types of facilities abroad. I asked a local architect, Mr. Julio King, if he was familiar with FEMA-361. He indicated that he was familiar but had not designed a facility to this spec. That led me to further exploration where I found Zachary Filmore of Word Domes and Peter Fedele of American Business Continuity Domes (ABC Domes). In the interview with Mr. Fedele, he stated that “Not only have I built dozens of domes that fall into this category, but several were funded to some extent by FEMA and I actually operate and utilize one of the domes today.” Articles were provided on facilities that have been built (Pyper, 2022; Houston, 2022). Most were funded at the 75/25 split. Five of the six listed projects are domes built by ABC Domes. Two of these projects, Edna, Texas and Archie, Missouri, are sports facilities and copies of the RFPs have been requested. In the interview with Mr. Filmore he indicated that while the design of these facilities was interesting, his preference was to build them. When asked about the facility he mentioned that he currently operates, he stated that “I was building industrial and commercial domes for my disaster and recovery clients. We have a facility in Lakeland, Florida which you can come out and see.” He also indicated that he held several patents in concrete, the material used in these domes.

In addition to the information received on several similar facilities that have been funded to a large extent by FEMA, the interviews with Mr. Fedele and Mr. Filmore yielded a significant amount of data on the technical and engineering aspects of their structures. Mr. Filmore stated, “The biggest part with these domes is, the inherent nature of how they are shaped. Everything about them just creates a natural safety element. The dome itself is one of the strongest shapes out there. You should consider your own head, for instance, a dome there just allows for the strength and that resistance to outside forces. In addition, the multi-function use, which is what you are kind of after, as well as the ability to use the structure as a school, gymnasium, and as a gathering place. But when the storm clouds start rolling in, they’ve got a place to go and shelter.”

The interview was conducted via Zoom which enabled the gentlemen to share proprietary engineering data not available in print. As an engineer, it was both impressive and refreshing to see the amount of science that led to this design. It became evident why these domes have the ability to withstand wind speed in excess of 250 miles per hour (Pyper, 2022).

Recommendations For Management

Priority	Recommendation	Action	Lead	Resources	Timescales	Critical success factors
1	Identify multiple options for the access road	Send follow-up correspondence to the Housing Finance Authority and the National Guard, if not successful explore new road via sponsored legislation, last resort explore other government land on different parts of the territory	VINOC Treasurer	Time Travel expenses	Dec 2023	Solution for pending issue regarding access road being in the flood plain

Priority	Recommendation	Action	Lead	Resources	Timescales	Critical success factors
2	Develop an operational Budget for the operation of the facility.	Obtain operational data on similar facilities as soon as a type and developer has been selected. Use this data to create a monthly and annual budget for the operation of the facility.	VINOC Staff	Final design specs, utility bill calculation, maintenance projections	Dec 2024	Annual appropriation from the Legislature will need to take this data into consideration. Request made by Senator Donna Frett-Gregory

Priority	Recommendation	Action	Lead	Resources	Timescales	Critical success factors
3	Once approved, develop an RFP that, in addition to the construction of the facility, includes energy efficiency, renewable energy, and maximizes sports space.	Utilize the past RFP data received and amend as necessary to produce an RFP that yields a facility that meets the desired function and form.	VINOC Facility Committee	Time Travel expenses	Dec 2023	Production of an RFP that meets the procurement guidelines and simultaneously produces the desired operational specs

Priority	Recommendation	Action	Lead	Resources	Timescales	Critical success factors
4	Explore options for a dormitory	Identify land within, adjacent, or in near proximity of the sports complex to construct a dormitory or living quarters for visiting athletes. In addition, search for hotels or villas that may be willing to partner.	VINOC Sec Gen	Time Travel expenses	Dec 2023	Work with VI Department of Tourism to identify accommodation partner. Identify funding and potential locations for a dormitory, or identify low-cost option to house visiting athletes and coaches

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Appendix

Hazard Mitigation Grant Program
Application
DR-4335-VI / DR-4340-VI

THIS SECTION FOR TERRITORY USE ONLY

Disaster Number: DR-4340-VI

Project Number: _____

Date THMO Received: _____

FEMA Submittal Date: _____

Application Status:

☒Initial Submission

☐Re-Submission (Check all that apply)

☐Scope of Work Change

☐Funding Change

☐Timeline Extension

☐Other:_____

Point of Contact:
Graciela Rivera
Territorial Hazard Mitigation Officer

Virgin Islands Territorial Emergency Management Agency

Address: 7 & 8 King Cross Street, Christiansted VI 00820

Phone: (340) 773-2244

Email: Graciela.Rivera@vitema.vi.gov

PROJECT OVERVIEW

1. Applicant Name: Virgin Islands Olympic Committee
2. Organizational Unit: Executive Board
3. Project Title: USVI Olympic Sports Complex Saferoom
4. Project Location: (Street Address, City, zip) Estate Nazareth, Red Hook Quarters, St. Thomas (near Ivanna Eudora Keen Running Track)
5. Total Number of Site(s) Included: 1
6. Estimated Federal Share: $12,011,033.45

   Estimated Non-Federal Share: $0.00

   Total Estimated Project Cost: $12,011,033.45

APPLICANT INFORMATION

1. Federal Tax ID Number: 66-0372891 FIPS Code: 78030

   DUNS Number: 969232292 CID Number: 78000

   (If you do not have a DUNS number, contact Dun & Bradstreet at 800-705-5711 to request one)

2. Primary Point of Contact:

   Name: Angel L. Morales Title: President

   Telephone: 1 340 643 6413 Fax: E-Mail: morales@virginislandsolympics.org

   Address: P.O. Box 1719, Kingshill, St. Croix, VI 00851

   The Primary Point of Contact is the person responsible for coordinating the implementation of this proposal, if approval is granted.

3. Alternate Point of Contact

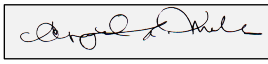
   Name: John Abramson Title: VIOC Secretary General

   Telephone: 1 340 642 4170 Fax: E-Mail: abramson@virginislandsolympics.org

   Address: P.O. Box 1719, Kingshill, St. Croix, VI 00851

4. Authorized Applicant Agent: President Angel Morales

5. Application Prepared by:
   (Authorized Sub-applicant)

   Signature: 

   Date: March 8th 2022

PROJECT DESCRIPTION

1. Project Location (See **APPENDIX C: Maps** – Conceptual Site Plan for approximate Turbine Locations)

   a. Latitude: 18.323996 Longitude: -64.858108

   b. Briefly describe the project location including intersecting streets, easily identified landmarks such as water bodies and structures.

   Estate Nazareth, Red Hook, next to the Ivanna Eudora Keen running track and behind St. Thomas Swimming Association pool. The exact location of the saferoom is to be determined. Three potential lots have been identified with the preferred location in Potential Block A – See Appendix A: Drawings – Concept Site Plan. Final site will be determined based on geotechnical, environmental, and historic reviews.

   c. Attached supporting documentation (check all that apply): See **APPENDIX C: Maps.**

   ☒ Project Location Map
   ☐ Multiple Site Locations Map (if more than one site)
   ☒ USGS topographic map
   ☒ Aerial photo
   ☒ Detailed Road map
   ☒ Other: FEMA Flood Hazard Map; Concept Site Map, ATC Wind Zone Map

2. History of Hazards / Project Area Past Damages
   a. Use the below table to describe all past damages from hazardous events (including name of storm if applicable) in the project area. Include Presidentially declared disasters as well as events that did not result in a Presidential Declaration.
      - Do not list community-wide damages. Damages must be site specific
      - Include information for as many past incidents as possible
      - Attach any supporting documentations (proof of loss, PWs, force account logs, etc.)
      - Direct costs should include damages to structures and infrastructure in the project area as a result of the hazard listed
      - Indirect costs should include the cost to the local government to respond to victims of the hazard in the project area, any interruptions to local businesses and losses of public services.
      - For acquisition and elevation, provide an overview in this section and specific damages to each property in an Individual Property Worksheet

Date	Duration (days)	Loss ($)	Description
September 20, 2017	1	$7.5 billion	**Hurricane Maria** is regarded as the tenth-most intense Atlantic hurricane on record and the most intense tropical cyclone worldwide of 2017, Maria was the thirteenth named storm, eighth consecutive hurricane, fourth major hurricane, second Category 5 hurricane, and the deadliest storm of the hyperactive 2017 Atlantic hurricane season.

September 6, 2017	1	$2.4 billion	Hurricane Irma was an extremely powerful and catastrophic Cape Verde-type hurricane, the strongest observed in the Atlantic in terms of maximum sustained winds since Wilma and the strongest storm on record to exist in the open Atlantic region.
September 14, 1995	1	$1.8 billion	Hurricane Marilyn was the fifteenth tropical depression and thirteenth named storm of the unusually busy 1995 Atlantic hurricane season, following closely on the heels of Hurricane Luis. Hurricane Marilyn was the most powerful storm to hit the Virgin Islands since Hurricane Hugo in 1989.
September 18, 1989	1	$3 billion	Hurricane Hugo had been the costliest hurricane to strike the United States before Andrew three years later in 1992. From September 17 through 18, 1989, it passed through the U.S. Virgin Islands and Puerto Rico, leaving $3 billion in damage in its wake.

b. Provide any additional details regarding past events:

3. Hazard to be Mitigated
   a. Type of hazard the proposed project will mitigate (select all that apply):

   ☒ Wind ☐ Fire ☐ Flood ☐ Tornado ☒ Seismic
   ☐ Landslide ☒ Other: Infrastructure failure

   b. Type of proposed project:

   ☐ Acquisition and Demolition ☐ Acquisition and Relocation ☐ Dry Flood proofing
   ☐ Drainage ☐ Elevation ☐ Generator
   ☐ Structural Retrofitting ☐ Non-Structural Retrofitting ☐ Wind Retrofit
   ☒ Other: Community Saferoom

4. Level of Protection:
   a. Level of protection the proposed project will provide for each structure.
   List data in Flood Levels (i.e. 10-, 25-, 50-, 100-year), MPH winds, or Mercalli Scale Earthquake (1-12). Example: 23 structures protected against the 100-year (1%)

   1 structure(s) protected against 10,000 MRI (192 mph winds)

   b. Years the proposed project will provide protection against the hazard(s) above.

   Project Useful Life (years): 30

c. List and attach all engineered calculations and supporting documentation used to determine the above level of protection

See Appendix A – Drawings: DOMTEC SafeDome – Design Aids.
FEMA PUL table indicates 30-year useful life for hurricane community safe rooms.
FEMA P-361 requires a 10,000MRI wind speed for safe rooms, for this location it is 192mph.

5. Project Description, Scope of Work and Protection Provided
   a. Describe in detail the specific problem(s) the proposed project is intended to alleviate.

The USVI Olympic Committee (VIOC) has worked with the VI Department of Sports, Parks, and Recreation (DSP&R) to identify a location in Estate Nazareth to build a Sports Complex that can be used a community saferoom. They have identified structural engineered dome shell construction for a free span FEMA rated dome structure.

b. Describe the proposed scope of work to accomplish this project. Provide a detailed description of the solution and mitigation proposed.

Scope of Work:
See **Appendix A – Drawings** for preliminary designs. Detailed construction scope of work, design drawings, detailed cost estimate and schedule will be produced during Part 1 A&E. This will include a detailed cost estimate with line-item breakdowns for each funding source, HMGP, USVI.

Phase 1 A&E:
FEMA HMGP Phase I A&E funds will be used for safe room engineering and design plans, drawings, or specifications as these elements:

- **Saferoom specific engineering analysis and feasibility studies**
- **Saferoom specific design drawing peer review per FEMA P-361**
- **Saferoom specific land/parcel survey**
- **Saferoom specific EHP analysis**
- **Saferoom specific permitting and regulatory compliance**
- **Saferoom specific project management**
- **Saferoom specific HMGP grants management**
- **Saferoom specific construction management** (for review of plans and specification specific to the saferoom)
- **Operations & Maintenance Plan** – To ensure protection of safe room occupants, VIDE will meet all FEMA P-361 requirements for safe room Operations and Maintenance (O&M) as described in P-361 (section A 4,1 – A 4.8), and the current version of FEMA's HMA Unified Guidance including:
  - O&M plan objective and parameters
  - Community outreach and notification
  - Medical care/equipment/supplies
  - Internal/external communications
  - Post-event operations
  - Staffing and personnel
  - Emergency provisions
  - Fire safety
  - Security/access and entry
  - Facility maintenance

Phase 2 Construction
Construction activities may include (but are not limited to) construction staking, debris/removal, fencing/security, environmental protection and site preparation, including equipment and debris staging. Specific details on these on-site aspects of the project are not available at this time – the A&E firm (to be procured) will review and determine these details in coordination with the general contractor (to be procured), VIOC, VITEMA, other Territorial agencies (as needed) and FEMA.

Construction elements will consist of all work to create a FEMA P-361, ICC 500 compliant safe room. Construction elements may include (but not be limited to) the following:

- Procurement of Construction Contractor
- Site work to prepare new site for Saferoom/Cafeteria construction
- Construction of ICC compliant Foundation, slab, footings, etc.
- Electrical wiring and fixtures such as lighting, data lines, signage, etc.
- Plumbing installation and fixtures
- ICC compliant exterior and interior walls (interior walls are for bathrooms, food prep areas, and isolation areas within the safe room footprint.) and ceiling.
- Procurement and Installation of ICC 500 compliant doors and windows
- ICC 500 compliant AC duct work, mechanical systems, ventilation systems
- ICC complaint sanitation bunk, and food preparation areas
- ICC 500 compliant Roofing system
- Procurement and installation of generator (Back-up power requirements per ICC 500)

c. Explain how the proposed project will solve the problem(s) and provide the level(s) of protection described above. If any other projects are underway or proposed in the project area, please describe. Also describe any planned future development in the project area. Please include building code requirements for new development and substantial improvements in the community.

This safe room will provide shelter space to 1,922 residents of St. Thomas during a hurricane or extreme weather event. This project will help to resolve the shortage of shelter space on St. Thomas that is rated to safe room wind speeds, which is the 10,000MRI location specific wind speed.

BUDGET / COST SUMMARY

Provide details of all project costs. For estimates, reasonable projections are essentials as this information is used for the Benefit-Cost Analysis (BCA). Do not include contingency costs in the budget. Avoid the use of lump sum costs.

1. Budget/Cost (See **APPENDIX D: Cost Data. A detailed budget will be developed and submitted with 30% design documents.**)

   a. Total Estimate Project Cost: **$12,011,033.45**

2. Funding Sources
   a. The maximum for FEMA share for HMGP projects is 75%. The other 25% can be made up of the State and Local funds as well as in-kind services. HMGP funds may be packaged with other Federal funds, but other Federal funds (except for Federal funds which lose their Federal identity at the State level – such as CDBG, ARS, HOME, etc.…) may not be used for the State or Local match.

Estimated Federal Share:	$12,011,033.45	100	% of Total
Non-Federal Share: Estimated Local Share	$00.00	0	% of Total
Total Funding Sources:	$12,011,033.45	100	Total %

   b. Source of Non-Federal Share
   List all courses and amounts utilized in the non-federal share including all in-kind services (note Budget/Cost Section above). In-kind services may not exceed the 25% non-federal share. If any portion of the non-Federal share will come from non-applicant sources (donated services, private donations, etc.) attach letters of funding commitment for each non-applicant source. (Round figures to the nearest dollar)

Source	Agency	Type of Funding	Amount	Commitment Letter Attached
N/A			$	

Source: State, Local, Private Non-Profit, Other
Agency: Specific entity providing match
Type of Funding: Administration, Cash, Consulting Fees, Engineering Fees, Equipment Operation/Rental, Labor Supplies, Other

   c. Additional comments related to the proposed project's funding:

DR 4335/4340 Hurricanes Irma/Maria are funding by FEMA/HMGP at 100% for the USVI. FEMA has waived the 25% cost-share for HMGP projects.

PROJECT TIMELINE / SCHEDULE OF WORK

1. Timeline / Tasks
   Provide a detailed works schedule and timeline for the proposed project major tasks, not to exceed a period of 2 years for performance (i.e. designing, engineering, permitting, etc.). Incorporate a description of the task's purpose and be sure the schedule allows for grant administration (sub-grantee contract execution, closeout, etc.) Also, consider the construction season; the award period of performance may occur during non-construction season. Be conservative and ask for more than you think you need, since the timeline will be the basis used to justify delays or extensions, if necessary. (MUST MATCH THE SOPE OF WORK AND BUDGET DESCRIPTION)
   (See APPENDIX E WORK SCHEDULE. An updated work schedule will be developed and completed with the 30% design documents for FEMA review.)

Total Timeframe (must not exceed 730 days, 24 months, or 2 years)	726 DAYS

(See **Appendix E: Work Schedule** for detailed schedule)

2. The start date for any proposed project begins upon FEMA approval. If a specific timeframe is needed, provide and explanation.

   Proposed work schedule follows the HMGP Period of Performance for this project, not to exceed 3 years or 1,050 days.

PLANNING REQUIREMENTS

1. Does your community have a current FEMA approved multi-hazard mitigation plan? ☐ Yes ☐ No

   Title of plan: USVI Territorial Hazard Mitigation Plan

   Date plan was approved by FEMA: July 2019

   Location of proposed project in mitigation plan strategies: (Reference the Page, Section/Part) Section 5, Goal 5, USVI Action Item 9

2. Is the community a good standing member with the National Flood Insurance Program? ☐ Yes ☐ No

   Community NFIP ID Number: #780000

3. Describe how the project is consistent with the risk assessment, goals, and actions in the Territory Hazard Mitigation Plan.

   Goal 5 -Improve sheltering capabilities throughout the entire Territory
   USVI Action Item 9: Identify potential opportunities for emergency shelters
   The use of the USVI Olympic Sports Complex Saferoom will ensure all residents within the area on the eastern side of St. Thomas remain safe during an emergency. It will allow the residents to remain close to their homes and will increase the Territory's storm shelter capacity.

BENEFIT-COST ANALYSIS (BCA) REQUIREMENTS

1. Provide information on the value calculated based on the Benefit-Cost Analysis.

   Benefit Cost Ratio:

   Total Project Benefits: $481,885,347 (Total savings realized by the project)

2. List and attach all BCA supporting documentation.

   Please see **APPENDIX G: BCA**

ENVIRONMENTAL REQUIREMENTS

A key component in the expeditious review of HMGP applications is the environmental review process, including review of the application for compliance with the National Environmental Policy Act (NEPA) and other federal laws and Executive Orders. FEMA requests the Sub applicant and/or territory assist in expediting the environmental review process with applicable federal and territory agencies regarding the proposed project as established in the Title 44 of the Code of Federal Regulations (CFR) Part 9 (Floodplain Management and Protection of Wetlands), and the FEMA NEPA Directive 108-1. **NO WORK can be done prior to the NEPA review process. If work is done on the proposed project before NEPA review is completed, it will not be eligible for Federal funding.**

As any proposed project requires specific documentation relative to its potential effect on the physical, biological and built environment, the below sections will assist you in ensuring proper documentation is submitted for your respective project. In some instances, additional documentation may be required prior to funding.

Table 1 lists the agency consultations that may apply to each type of project. Contact your FEMA/VITEMA staff to determine with which agencies coordination is required dependent on project specifics. For projects that require permits from territory regulatory agencies, it is suggested that the Sub applicant discuss the project with those agencies before submitting the application. This will enable the applicant to identify potential issues of concern.

Table 2 should be filled out by the Sub applicant and included with the HMGP application.

Table 3 is an environmental and historic preservation checklist. A "yes" response to any item on this checklist indicates that the regulation or statute may apply to this project. Please provide all relevant documentation or information to support your answer. Sub applicants should complete this checklist to the best of their ability.

In coordinating with the below listed agencies and FEMA/VITEMA, provide several photographs of the project site and adjacent area/structures, a description of the project referencing structure/site addresses, and a map of sufficient scale and detail that show the project site and surrounding project area (area of potential effects). Any drawings or plans available should also be provided. It is suggested that the Sub applicant develop a fact sheet about the project to be forwarded to each agency with this information. Office of the GAR, Hazard Mitigation Office and FEMA are available to provide assistance in the consultation process, upon request. Consultation with territory/federal agencies must indicate the possibility of FEMA-HMGP funding. If the Territory/Sub applicant is confident that those agencies identified for required consultations have no jurisdiction over the proposed project, provide the appropriate reason within the application and do not initiate that consultation. Note that FEMA conducts the consultations with the State Historic Preservation Office and other Federal Agencies such as Fish and Wildlife Service using the above-detailed information provided by the Sub applicant.

Table 1: Coordination with Resource Agencies

Agency	Safe Room	Elevation/ Relocation/ Acquisition	Roads/ Bridges	Stream work	Shoreline	Dams
State Historic Preservation Office (SHPO)	**May be Required**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
U.S. Fish & Wildlife Service (USFWS)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
NOAA Marine & Fisheries Service (NOAA M&FS)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Agency	Safe Room	Elevation/ Relocation/ Acquisition	Roads/ Bridges	Stream work	Shoreline	Dams
U.S. Army Corps of Engineers (USACE)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Department of Planning and Natural Resources	**May be Required**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Historic Preservation Committees	**May be Required**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Table 2: Consultation Summary

Agency Consulted	Date Contacted	Method Letter/Phone	Result/Comments/Issues
USACE	**N/A**		
SHPO	**N/A**		
USFWS	**N/A**		
NRCS	**N/A**		
NOAA M&FS	**N/A**		
DPNR	**N/A**		

Table 3: EHP Checklist

Environmental Regulation or Statute	Yes	No	Unknown
National Historic Preservation Act (NHPA)			
Would the proposed project affect, or is the proposed project in close proximity to any buildings or structures 45 years or more in age?	☐	☐	☒
Will the proposed project involve disturbance of ground?	☒	☐	☐
Endangered Species Act (ESA)			
Are federally listed or endangered species, or their critical habitat, present in or near the project area and, if so, which species are present?	☐	☐	☒
Will the proposed project remove or affect vegetation?	☒	☐	☐
Is the proposed project in or near (within 200 feet), or likely to affect, any type of waterbody or body of water?	☐	☒	☐
Clean Water Act (CWA) and Rivers and Harbors Act			
Will the proposed project involve dredging or disposal of dredged material, excavation, the addition of fill material, or result in any modification to water bodies or wetlands designated as 'waters of the United States' as identified by the US Army Corps of Engineers or on the National Wetland Inventory?	☒	☐	☐
Executive Order 11988 (Protection of Floodplains) and Executive Order 11990 (Protection of Wetlands)			
Does a Flood Insurance Rate Map, Flood Hazard Boundary Map, hydrological study, or some other source indicate that the project is located in, or will affect, a 100-year floodplain, a 500-year floodplain (if a critical action), an identified regulatory floodway, or an area prone to flooding?	☐	☒	☐

Environmental Regulation or Statute	Yes	No	Unknown
Is the proposed project located in, or will it affect, a wetland as listed in the National Wetland Inventory?	☐	☒	☐
Will the proposed project alter a watercourse, water flow patterns, or a drainage way, regardless of its floodplain designation?	☐	☒	☐
Is the proposed project located in, or will it affect, a floodplain or wetland?	☐	☒	☐
Is the proposed project located in, or will it affect, a floodplain or wetland? If yes, the 8-step process must be completed.	☐	☒	☐
Coastal Zone Management Act (CZMA) and Coastal Barrier Resources Act (CBRA)			
Is the proposed project located in the state's designated coastal zone?	☐	☒	☐
Is the proposed project area located in a Coastal Barrier Resources System Unit or an Otherwise Protected Area?	☐	☒	☐
Farmland Protection Policy Act (FPPA)			
Will the proposed project convert more than five acres of 'prime or unique' farmland outside city limits to a non-agricultural use?	☐	☒	☐
Resource Conservation Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act			
Is there reason to suspect that there are contaminants from a past use on the property associated with the proposed project?	☐	☒	☐
Are there any studies, investigations, or enforcement actions related to the property associated with the proposed project?	☐	☒	☐
Will any project construction or operation activities involve the use of hazardous or toxic materials?	☐	☒	☐
Are any of the current or past land uses of the property associated with the proposed project or are any of the adjacent properties associated with hazardous or toxic materials?	☐	☒	☐
Executive Order 12898 (Environmental Justice for Low Income and Minority Populations)			
Are there any low income or minority populations in the project's area of effect or adjacent to the project area?	☐	☐	☒
Other Environmental/Historic Preservation Laws (including applicable state laws) or issues			
Are other environmental/historic preservation requirements associated with this project?	☐	☐	☒
Are any controversial issues associated with this project?	☐	☒	☐
Have any public meetings been conducted, public notices been circulated, or public comments been solicited on the proposed project?	☐	☒	☐

ALTERNATIVE ACTIONS

The NEPA process requires that at least two alternative actions be considered that address the same problem/issue as the proposed project. In this section, list two feasible alternative projects to mitigate the hazards in the project area.

1. **No Action Alternative**

   Discuss the impacts on the project area if no action is taken.

   > If no action is taken the USVI Olympic Sports Complex Saferoom will not be constructed and no additional saferoom space will be added to St. Thomas. This will leave the Territory with a lower shelter capacity, leaving individuals vulnerable to hurricane and extreme weather.

2. **Other Feasible Alternative**

   Discuss a feasible alternative to the proposed project. This could be an entirely different mitigation method or a significant modification to the design of the current proposed project. Include engineering details.

   a. Project description

      Describe project in detail and explain how the alternative project will solve the problem(s) and/or provide protection from the hazard(s).

      > Feasible alternative 1 is to build a dedicated saferoom of comparable size on the eastern side of St. Thomas. This safe room will be constructed to the same capacity as the preferred alternative and be constructed to the 10,000MRI wind speed.

   b. Impacts

      Discuss the impact of this alternative on the project area. Include comments on these issues as appropriate: Environmental Justice, Endangered Species, Wetlands, Hydrology, Floodplain/Floodway, Historic Preservation, and Hazardous Materials.

      > This alternative will have a similar impact on the environment as it will require additional ground disturbance to construct an additional building.

   c. Explain the reason for rejecting the Other Feasible Alternative

      > This alternative was rejected because a multi-purpose saferoom will have cost savings in maintenance costs and the parcel is already owned by the VI DSP&R and earmarked for a sports complex. It would not be reasonable to construct an additional building on the eastern side of St. Thomas just for the purpose of a safe room when an Olympic Sports Complex can serve as a safe room for the community.

   d. Funding of Alternative Project

Estimated Federal Share:	$15,000,000.00
Non-Federal Share:	$00.00
Total Funding:	$15,000,000.00

3. **Other Feasible Alternative**

   Discuss a feasible alternative to the proposed project. This could be an entirely different mitigation method or a significant modification to the design of the current proposed project. Include engineering details.

   a. Project description

Describe project in detail and explain how the alternative project will solve the problem(s) and/or provide protection from the hazard(s).

Feasible alternative 2 is to construct individual residential safe rooms for the 1,922 residents that would seek shelter at the USVI Olympic Sports Complex Safe room. These safe rooms would be constructed to each location specific 10,000MRI wind speed.

b. Impacts

Discuss the impact of this alternative on the project area. Include comments on these issues as appropriate: Environmental Justice, Endangered Species, Wetlands, Hydrology, Floodplain/Floodway, Historic Preservation, and Hazardous Materials.

This alternative will have a greater impact on the environment as it will require additional ground disturbance to construct over 1,000 safe rooms across the eastern side of St. Thomas. In addition, many locations have steep terrain or may be in coastal floodplain zones that would restrict the construction or add additional impacts.

c. Explain the reason for rejecting the Other Feasible Alternative

This alternative was rejected due to the large cost of constructing individual residential safe rooms. This alternative would be less cost-effective then constructing a community multi-purpose safe room.

d. Funding of Alternative Project

Estimated Federal Share:	$192,200,000
Non-Federal Share:	$00.00
Total Funding:	$192,200,000

AGREEMENT FORMS

Applicants are required to provide reasonable assurances with regard to issues like maintaining projects once work is complete, maintaining a drug-free workplace environment, etc. Please note forms must be signed by someone authorized to make commitments on behalf of the eligible applicant, including certifying that the applicant's non-Federal share will be available if/when an award is made.

☐ FEMA Form 20-16B, Assurances Construction Program
OR
☐ FEMA Form 20-16A Assurances Non-Construction Program

☐ FEMA Form 20-16C, Certifications Regarding Lobbying, etc.
☐ SF-LLL, Disclosure of Lobbying Activities
☐ Maintenance Agreements