

Broadcasting Board of Governors
FY 2014 Climate Change Adaptation Plan
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SUBJECT: Climate Change Adaptation Policy Statement

The Broadcasting Board of Governors (BBG), in accordance with the U.S. International Broadcasting Act of 1994 (as amended), oversees U.S. civilian international media. The BBG distributes programming in 61 languages to more than 100 countries via radio (shortwave, medium wave (AM), FM and satellite), terrestrial and satellite TV, the web, live streaming, mobile devices, and social media to unprecedented weekly global audiences of more than 206 million people in 2014.

In accomplishing this mission, the BBG oversees the International Broadcasting Bureau (IBB), which manages program distribution and marketing for the Agency, and provides administrative support for its broadcasting elements, the Voice of America and Office of Cuba Broadcasting. In addition, through its Office of Technology, Services and Innovation (TSI), IBB delivers program content for all BBG networks and provides information technology support to many offices throughout the Agency. In this effort, TSI manages more than 90 transmitting sites worldwide that deliver shortwave, medium wave, FM, and TV broadcasts. It also leases broadcast time at 17 transmitting sites in 12 countries.

The purpose of this policy statement is to document the BBG's commitment to climate change adaptation planning to address the challenges posed by climate change to the Agency's mission, programs, and operations. Through adaptation planning, the Agency will identify how climate change is likely to impact our ability to achieve our mission, operate our facilities, and meet our policy and program objectives. Through adaptation planning, the Agency will develop, prioritize, implement, and evaluate actions to moderate climate change risks and exploit any new opportunities that climate change may bring.

The BBG's FY 2014 Climate Change Adaptation Plan addresses the Agency's operating environment, and identifies the primary climate change issues faced by it. The Plan also identifies the potential impacts climate change will have on the Agency's personnel and infrastructure, and discusses the Agency's near-term and long-term approaches for ensuring that it is able to meet its operational requirements despite changes to the climate. The Plan is a living document and will be updated as necessary to address the impact our changing environment is having on the Agency's operations.

Sincerely,



André V. Mendes
Director of Global Operations
Broadcasting Board of Governors

June 5, 2014

SUBJECT: Broadcasting Board of Governors' Climate Change Adaptation Plan for FY 2014

1. Agency Overview

1.1 The Broadcasting Board of Governors (BBG), in accordance with the U.S. International Broadcasting Act of 1994 (as amended), oversees U.S. civilian international media. The BBG distributes programming in 61 languages to more than 100 countries via radio (shortwave, medium wave (AM), FM and satellite), terrestrial and satellite TV, the web, live streaming, mobile devices, and social media to unprecedented weekly global audiences of more than 206 million people in 2014.

1.2 The BBG consists of Federal and non-Federal elements. The Federal element includes the International Broadcasting Bureau (IBB) with its broadcasting organizations, the Voice of America (VOA) and the Office of Cuba Broadcasting (OCB). The IBB manages program distribution and marketing for the Agency and provides administrative support for VOA and OCB.

1.3 Within the IBB, the *Office of Technology, Services and Innovation (TSI)* manages a broad range of technical and infrastructure functions, including delivering program content for all BBG networks and providing information technology support to many offices throughout the Agency. TSI strives to distribute BBG content in the most cost-effective and efficient manner possible. It manages more than 90 transmitting sites worldwide that deliver shortwave, medium wave, FM, and TV broadcasts. TSI also leases broadcast time at 17 transmitting sites in 12 countries. TSI is also responsible for coordinating BBG's strategic sustainability planning effort and its climate change adaptation planning effort.

1.4 Within TSI, the *Director, Operations & Stations Division (T/EOS)* is responsible for the day to day operations of the Agency's Transmitting Station Network. A number of these transmitting sites are large, energy-intensive facilities, and are the Agency's largest users of electricity. For this reason, the T/EOS Director provides overall guidance and direction for the Agency's energy management program and serves as the Agency's Senior Sustainability Officer (SSO). In addition, the T/EOS Director is responsible for providing overall guidance and direction for the Agency's climate change program. The primary focus of this program is ensuring that the Agency is able to meet its operational requirements despite the changes in climate.

1.5 The BBG is committed to climate change adaptation planning. This process will enable the Agency to identify early on the actions that should be undertaken for the orderly upgrade of its broadcast facilities, so that they can continue to operate at their highest level in the operating environment envisioned for the future. Through adaptation planning, the Agency will identify the potential impacts a changing climate will have on its mission, operations, and programs. Through adaptation planning, the Agency will develop, prioritize, implement, and evaluate actions to moderate climate change risks and exploit any new opportunities that climate change may bring.

2. Planning for Climate Change Related Risk

2.1 Operating Environment:

2.1.1 Domestically, the Agency leases office and broadcasting studio space through the General Services Administration (GSA) in Washington, DC, Miami, FL, New York, NY, and Los Angeles, CA. In addition, the Agency occupies two USG-owned transmitting sites in North Carolina and Florida, and leases two transmitting sites in the Commonwealth of Northern Mariana Islands.

2.1.2 By far, the large majority of the Agency's facilities are located overseas. These facilities include seven transmitting stations, which house a number of large shortwave (SW) and medium wave (MW) transmitters, and are the Agency's primary transmitting facilities. In addition, the Agency operates or supports a large number of smaller sites primarily operating one, in most cases, FM transmitter. These smaller sites are located in many countries throughout the world.

2.2 Planning Element i: Identification and assessment of climate change related impacts on and risks to the Agency's ability to accomplish its missions, operations, and programs:

2.2.1 Based on its experiences in supporting this large network, the Agency has identified four primary climate change issues that it will have to address. These issues are:

- The impact on employee health as the working and living conditions change.
- The impact on station operations to include the impact on equipment, facilities, infrastructure, and the Agency's ability to support them with sufficient energy, water, supplies, and materials.
- The impact of rising sea levels, as a number of the sites are located near the sea.
- The Impact of more frequent and stronger heat waves, and more frequent high-intensity rain and snow storms. A number of these facilities contain very tall antenna systems that are vulnerable in extremely high wind situations. In addition, these facilities conduct satellite uplink and downlink operations that can be affected by "rain fade", which is caused by rain, snow or ice storms.

2.2.2 The following areas (issues) represent potential impacts that will need to be addressed in order for the Agency to adapt to the predicted effects of climate change. Under current operating conditions, the effects of climate change are not having a significant impact on the mission of the Agency's transmitting stations; however, the anticipated changes that will occur in the future could pose a serious threat to one or more of the transmitting sites.

2.2.2.1 Facilities and Infrastructure:

- Changing environmental conditions (heat waves, strong storms, flooding, etc.) may tax the Network's ability to maintain equipment and facilities, as the modification of existing infrastructure or the creation of new infrastructure may be required in order to continue to provide support to one or more of the transmitting sites.
- The logistical support systems for these sites may have to be modified in order to adapt to the changing operating conditions.

- The continued use of some of the current transmitting locations may become unviable due to flooding, the loss of all or portions of the current support infrastructure, or the inability to provide adequate logistical support.
- Selecting viable sites for any future transmitting locations may become more difficult due to infrastructure and logistical hurdles.
- The availability of usable potable and non-potable water may become a problem due to potential draught conditions, or infiltration of sea water.
- Obtaining the types of broadcast equipment needed to support operations may become an issue as deteriorating air quality and other changing environmental factors may affect how the equipment operates. In some cases, this equipment may need to be tailored by location.
- Finding reliable and affordable sources of electricity will continue to be a problem, which eventually could affect a site's ability to obtain sufficient stable electricity to meet its mission requirements.
- Fire is always a concern, especially in the antenna fields, and this concern will increase if the number of wild fires increases as the climate becomes hotter and drier.

2.2.2.2 Personnel:

- Deteriorating air quality may affect how the employees accomplish their work.
- Increases in the frequency of illnesses due to changes in average temperature, as well as, exposure to "new" illnesses may increase employee absences.
- Work-related injuries may increase as the work environment changes.

2.3 Planning Element ii: Description of programs, policies, and plans the Agency has already put in place, as well as additional actions the Agency will take, to manage climate risks in the near term and build resilience in the short and long term:

2.3.1 The following bullets identify potential adaptations the Agency can explore as it refines its climate change adaptation plan:

- Need to address replacing fixed facilities with other means of broadcasting where practical.
- Need to assess the Agency's ability or need to continue to support each of its transmitting locations, and if continued support is needed, need to determine ways to continue to provide this support.
- Need to identify a supportable way to provide backup power if commercial sources of electricity prove unreliable.
- Need to explore employing new or modified operating procedures and broadcast equipment configurations to maximize broadcast signal quality.
- Need to explore adjusting on-site work routines as anticipated environmental changes occur.

Things to address would include:

- Upgrading facilities to alleviate unhealthy work conditions brought on by climate change.
- Working with local communities to ensure that health care facilities continue to address the evolving health-related issues associated with climate change.
- Need to adjust logistical support methods to ensure that the local infrastructure remains capable of meeting the station's support requirements.

- Need to identify ways to reduce the impact on the facilities and support infrastructure of wild fires.
- Need to determine actions that can be taken to ensure that adequate supplies of water are available to sustain operations. This future planning also should address the potential for operating with a lack of year-round source of water, and operating with low quality water for irrigation and other applications when potable water is not required.
- Need to identify ways to properly handle increased storm water runoff to include determining if improvements need to be made to drainage systems.
- Need to identify ways to protect large antenna systems and satellite dishes from damage caused by high winds, as the loss of these assets can result in lost broadcasts.

2.3.2 Near-Term Climate Change Adaptation Process:

2.3.2.1 As an initial step in the climate change adaptation process, an in-house study was conducted to determine the impact, if any; climate change would have on the broadcast signal. As suspected, it was determined that it would not have any significant impact.

2.3.2.2 The primary focus of the near-term process is to maintain the Agency's large transmitting stations in operating order until a final decision is made on each facility's future. Maintaining these facilities, with a number of them located in remote areas, is challenging under normal circumstances, and will become more difficult as the anticipated effects of climate change become more and more apparent.

2.3.2.3 During this timeframe, any facility upgrade project undertaken by a transmitting station is incorporated into the Agency's maintenance & repair (M&R) program and funded in the FY requested, if sufficient funding is available. Funding for M&R projects at the transmitting stations has been limited for a number of years, and it appears that it will remain that way for some time. To compound matters, since FY 2013, this effort has been severely hampered due to extensive storm damage sustained by two of our sites. The winds from these storms caused significant damage, with the antenna systems suffering the worst. Funding for these repairs has been estimated to be approximately \$3.0 million. Because of this situation, only high priority M&R actions are being undertaken elsewhere.

2.3.2.4 Currently, M&R projects that affect both climate change adaptation and strategic sustainability involve seeking ways to reduce energy usage at a site. These large stations are high-intensity energy facilities that do not fit the standard building energy profile for heating, ventilating, air conditioning (HVAC) systems, and electric loads used for normal buildings. Reducing the amount of energy needed to operate a site will enhance the site's ability to maintain normal operations as the operating environment changes due to climate change. The following are two examples of actions in this area:

- Beginning in FY 2010, the Agency installed energy-saving technology on many transmitters in the global network. The purpose of this project was to reduce the amount of electricity used by the large shortwave transmitters at these broadcast facilities. Since initiating amplitude modulation companding (AMC) on these transmitters, the stations have seen a significant reduction in their energy use each year, with no impact on the quality of the broadcasts.
- In March 2013, one transmitting station received permission to evaluate the impact of "black heating" a transmitter's filaments when the transmitter was off the air instead of operating the

transmitter at full standby power. The purpose of the evaluation was to identify possible energy savings and determine the effect, if any, “black heat” had on the operation of the transmitter. The station has been testing this mode on one of its transmitters and estimates an annual power reduction of 127,400kWh. Based on the success of the station’s “black heat” tests, in December 2013, the station was authorized to implement “black heat” on its other six shortwave transmitters.

2.3.3 Long-Term Climate Change Adaptation Process:

2.3.3.1 Process Summary:

- **Action Description:** Realign the Agency’s distribution methods to deliver program content in the manner consumers now want to access it.
- **Action Goal:** To restructure the Agency’s shortwave distribution network so that the Agency retains adequate shortwave service to high priority target areas.
- **Agency Lead:** Office of Technology, Services, and Innovation
- **Risk or Opportunity:** In planning for and carrying out this restructuring, the Agency will take this opportunity to identify the large fixed facilities that it will need in the future to meet its mission requirements. Once these key facilities are identified, Agency personnel can then focus on improving each facility’s ability to operate in a changing environment.
- **Scale:** Agency level
- **Timeframe:** The project will begin in FY 2014 with an end date to be determined.
- **Implementation Method:** The decisions will be based on the target audiences to be reached, the best means to reach the target audiences, and the fixed facilities that best support this effort.
- **Performance:** The metrics to be used to measure performance will be determined as part of this action.
- **Inter-governmental Coordination:** None at this time.
- **Resource Implications:** None at this time.
- **Challenges/Further Considerations:** None at this time.
- **Highlights of Accomplishments to Date:** The project is still in the initial stages.

2.3.3.2 Process Discussion:

2.3.3.2.1 The Agency’s long-term plans for adapting to anticipated climate changes will take some time to fully develop because the Agency must first come to terms with how it wants to realign its program delivery structure, as identified in the Agency’s strategic plan, to “*reach audiences on their preferred media platforms.*” This realignment recognizes that “*the Agency’s distribution methods and means have not strategically tracked the shifts in media use. We must therefore align how we deliver our content with how consumers now access it.*” In general terms, the Agency plans on reducing the number of large fixed facilities it maintains by replacing them through advances in technology.

2.3.3.2.2 The Agency’s major transmitting facilities primarily broadcast the Agency’s programs using large shortwave transmitters. This technology, while critical to the Agency’s success in the past, no longer meets the challenges of broadcasting in the 21st Century. In the future, it is anticipated that the Agency will need to significantly reduce its heavy use of its shortwave platform, and move to more audience preferred platforms such as, satellite and Internet radio, mobile phone technologies, and

Internet-based social media. The Agency's proposed actions as expressed in the FY 2014 Budget "will not eliminate shortwave; rather, it will restructure and evolve the BBG shortwave distribution network to leverage the use of stations with the lowest operating costs and maintain adequate shortwave service to high priority target areas where shortwave transmissions will continue to be important to satisfy Agency mission requirements."

2.3.3.2.3 In light of the above, the Agency plans on making wholesale changes in how it distributes its content. In the future, it will use shortwave to broadcast to the half-dozen or so countries where it makes sense to do so, but the Agency "will sharply draw down our shortwave capacity to reallocate the resources to the new platforms our audiences are using." In support of this effort, the Agency plans on making "pragmatic, research-based decisions on which shortwave and medium wave radio transmissions and facilities to continue, and which to draw down or close." The resources saved through this effort will be used to support the more effective broadcast platforms.

2.3.3.2.4 In this fluid environment, it will take some time to determine which transmitting facilities will remain operational for the foreseeable future. Once this information becomes available, the Agency will be able to focus on improving the infrastructure of those facilities, if required, with enhancements that are appropriate for climate change adaptation.

2.4 Planning Element iii: A description of how any climate change related risk ...that is deemed so significant that it impairs an Agency's statutory mission or operation will be addressed, including through the Agency's existing reporting requirements: At this point in time, the Agency has not identified a climate change related risk so significant that it would impair the Agency from delivering its programming to its intended audiences, as advances in technology have provided the Agency with multiple platforms that can be used to deliver this programming.

2.5 Planning Element iv: A description of how the Agency will consider the need to improve climate adaptation and resilience, including the costs and benefits of such improvement, with respect to Agency suppliers, supply chain, real property investments, and capital equipment purchases such as updating Agency policies for leasing, building upgrades, relocation of existing facilities and equipment, and construction of new facilities:

2.5.1 The Agency's domestic profile is very small. Most of its office and broadcasting studio space is located in large urban centers, and these spaces are leased through GSA. Our facilities personnel work closely with GSA on space upgrades and building infrastructure requirements. We use the latest technology and practices available, within our budgetary restraints, to support our broadcasting efforts, IT systems, and building upgrades. The local infrastructure (streets, roads, buses, subways, etc.) that surrounds these work areas is controlled by Federal or local governments.

2.5.2 The Agency occupies two USG-owned transmitting sites that are located within the United States. As mentioned in paragraph 2.3.3.2.3, these facilities will be evaluated along with the other large transmitting facilities to determine their future role within the Agency.

2.6 Planning Element V: A description of how the Agency will contribute to coordinated interagency efforts to support climate preparedness and resilience at all levels of government, including collaborative work across agencies' regional offices and hubs, and through coordinated development of information, data, and tools, consistent with... this order: This Agency is open to cooperating with other

agencies in the downtown Washington, DC area on appropriate climate change adaptation initiatives. However, the Agency is not staffed with any experts in the field of climate change adaptation.

3. Modernizing Federal Programs and Policies to Support Climate Resilient

Investment: This portion of the template for the climate change adaptation plan is not applicable to this Agency, as the three elements related to this topic are concerned with domestic programs and policies. The charter of this Agency is focused outside of the United States and its programs and policies do not affect internal regions, states, local communities, and tribes.

The T/EOS point of contact for this plan is Clement Heincer, T/EOS/N, 202-382-7363, cheincer@bbg.gov.

A handwritten signature in cursive script that reads "Mark Filipek".

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