

Office of International and Tribal Affairs

Climate Change Adaptation Implementation Plan

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This document has been prepared by the Office of International and Tribal Affairs, within the Environmental Protection Agency, as part of an Agency-wide effort to address climate change.

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Preface

The U.S. Environmental Protection Agency (EPA) is committed to identifying and responding to the challenges that a changing climate poses to human health and the environment.

Scientific evidence demonstrates that the climate is changing at an increasingly rapid rate, outside the range to which society has adapted in the past. These changes can pose significant challenges to the EPA's ability to fulfill its mission. The EPA must adapt to climate change if it is to continue fulfilling its statutory, regulatory and programmatic requirements. The Agency is therefore anticipating and planning for future changes in climate to ensure it continues to fulfill its mission of protecting human health and the environment even as the climate changes.

In February 2013, the EPA released its draft *Climate Change Adaptation Plan* to the public for review and comment. The plan relies on peer-reviewed scientific information and expert judgment to identify vulnerabilities to EPA's mission and goals from climate change. The plan also presents 10 priority actions that EPA will take to ensure that its programs, policies, rules, and operations will remain effective under future climatic conditions. The priority placed on mainstreaming climate adaptation within EPA complements efforts to encourage and mainstream adaptation planning across the entire federal government.

Following completion of the draft *Climate Change Adaptation Plan*, each EPA National Environmental Program Office, all 10 Regional Offices, and several National Support Offices developed a *Climate Adaptation Implementation Plan* to provide more detail on how it will carry out the work called for in the agency-wide plan. Each *Implementation Plan* articulates how the office will integrate climate adaptation into its planning and work in a manner consistent and compatible with its goals and objectives.

Taken together, the *Implementation Plans* demonstrate how the EPA will attain the 10 agency-wide priorities presented in the *Climate Change Adaptation Plan*. A central element of all of EPA's plans is to build and strengthen its adaptive capacity and work with its partners to build capacity in states, tribes, and local communities. EPA will empower its staff and partners by increasing their awareness of ways that climate change may affect their ability to implement effective programs, and by providing them with the necessary data, information, and tools to integrate climate adaptation into their work.

Each Program and Regional Office's *Implementation Plan* contains an initial assessment of the implications of climate change for the organization's goals and objectives. These "program vulnerability assessments" are living documents that will be updated as needed to account for new knowledge, data, and scientific evidence about the impacts of climate change on EPA's mission. The plan then identifies specific priority actions that the office will take to begin addressing its vulnerabilities and mainstreaming climate change adaptation into its activities. Criteria for the selection of priorities are discussed. An emphasis is placed on protecting the most vulnerable people and places, on supporting the development of adaptive capacity in the tribes, and on identifying clear steps for ongoing collaboration with tribal governments.

Because EPA's Programs and Regions and partners will be learning by experience as they mainstream climate adaptation planning into their activities, it will be essential to evaluate their efforts in order to understand how well different approaches work and how they can be improved. Each *Implementation Plan* therefore includes a discussion of how the organization will regularly evaluate the effectiveness of its adaptation efforts and make adjustments where necessary.

The set of *Implementation Plans* are a sign of EPA's leadership and commitment to help build the nation's adaptive capacity that is so vital to the goal of protecting human health and the environment. Working with its partners, the Agency will help promote a healthy and prosperous nation that is resilient to a changing climate.

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Deputy Administrator

September 2013

I. Background

Overview of OITA's Role

The role of the Office of International and Tribal Affairs (OITA) is to advance EPA's international environmental priorities and lead the Agency's Tribal Environmental Program tribal environmental program. To achieve this, OITA employs a multi-disciplinary approach.

Internationally, OITA staff works at the national, regional and multilateral levels to identify risks to human health and the environment and forge policy and programmatic responses. OITA works with other federal agencies to develop negotiating positions and represent the foreign policy interests of the United States.

OITA also leads EPA's efforts to protect human health and the environment of federally-recognized tribes by supporting implementation of federal environmental laws consistent with the federal trust responsibility, the government-to-government relationship, and EPA's 1984 Indian Policy.

While OITA is a small office, and thus limited in scope, it currently addresses climate change adaptation in several program areas and will continue to consider the effects of climate change when developing policies and implementing programs. OITA anticipates that requests for assistance to build climate adaptive capacity will increase over time.

II. Vulnerability Assessment for OITA

Vulnerable Populations

Certain parts of the population, such as children, pregnant women, the elderly, minorities, the poor, persons with underlying medical conditions and disabilities, those with limited access to information, and tribal and indigenous populations, can be especially vulnerable to the impacts of climate change. Also, certain geographic locations and communities are particularly vulnerable, such as those located in low-lying coastal areas. A key principle guiding EPA's efforts to integrate climate adaptation into its programs, policies and rules calls for adaptation plans to prioritize helping people, places and infrastructure most vulnerable to climate impacts, designed to be implemented with meaningful involvement from all parts of society.

This Implementation Plan identifies key programmatic vulnerabilities and the priority actions that will be taken to address those vulnerabilities over time. As this Plan is implemented, special consideration will be given to communities and demographic groups most vulnerable to the impacts of climate change. The Agency will work in partnership with these communities to increase their adaptive capacity and resilience to climate change impacts. These efforts will be informed by experiences with previous extreme weather events (e.g. Hurricane Katrina and Superstorm Sandy) and subsequent efforts.

In general, since OITA views its programmatic and mission related vulnerabilities as largely arising from the potential climate vulnerabilities of partner organizations.

- A. International** – Addresses country, regional, and multilateral environmental engagements, typically driven by formal international processes and partnerships.

Approach

The international office engages international and regional organizations and governments in order to further international environmental priorities. In the context of international environmental policy development, reliable data, thorough analysis, and vetted approaches are important foundational elements. These foundational elements can be used by stakeholders at the local, national, and international levels to inform policy development. The development of virtual networks allows this information and policy guidance to be shared among relevant stakeholders, and facilitates recognition and sharing of best practices.

Examples of Potential Vulnerabilities

- Lack of basic data needed to make informed decisions about climate adaptation, especially for urban settings that anticipate dramatic increases in population in the coming decades.
- While the United States has an array of sophisticated analytical tools for assessing climate vulnerability, many partner countries do not possess this capacity.
- The United States has identified the Arctic as a region where the effects of climate change have been and will continue to be felt most acutely, with a high degree of certainty.¹
- Lack of effective networking and information sharing mechanisms in many partnering developing countries to assess vulnerabilities, develop effective action plans, and implement these plans, especially in urban settings.
- Based on specific climactic circumstances in countries and regions, vulnerabilities such as heat stress, sea level rise, droughts and floods are expected to have significant negative impacts, particularly in partner developing countries in Africa and Asia³.

B. Tribal – The American Indian Environmental Office (AIEO)

Approach

EPA values its unique government-to-government relationship with tribes in planning and decision-making. This trust responsibility has been established over time and is further expressed in the 1984 EPA Policy for the Administration of Environmental Programs on Indian Reservations and the 2011 EPA Policy on Consultation and Coordination with Indian Tribes. These policies recognize and support the sovereign decision-making authority of tribal governments.

Supporting the development of adaptive capacity among tribes is a priority for the EPA. Tribes are particularly vulnerable to the impacts of climate change, due to the integral nature of the environment within their traditional lifeways and culture. Due to shrinking federal budgets, there is increased need to develop adaptation strategies that promote sustainability and reduce the impact of climate change on tribes.

EPA engaged tribes through a formal consultation process in the development of the Agency's Climate Change Adaptation Plan. Tribes identified some of the most pressing issues including erosion, temperature change, drought, and changes in access to and quality of water. Tribes recommended a number of tools and strategies to address these issues, including improving access to data; supporting baseline research to better track the effects of climate change;

developing community-level education and awareness materials; and providing financial and technical support. At the same time, tribes challenged EPA to coordinate climate change activities with other federal agencies so that resources are better leveraged and administrative burdens are reduced.

This Implementation Plan identifies specific steps that will be taken to partner with tribal governments on an ongoing basis to increase their adaptive capacity and address their adaptation-related priorities. These collaborative efforts will benefit from the expertise provided by our tribal partners and the Traditional Ecological Knowledge (TEK) they possess. TEK is a valuable body of knowledge in assessing the current and future impacts of climate change and has been used by tribes for millennia as a valuable tool to adapt. Consistent with the principles of the 1984 Indian Policy, TEK is viewed as a complementary resource that can inform planning and decision-making.

AIEO will work with both its internal and external parts to advocate for the priorities detailed above.

Examples of Potential Vulnerabilities

- Among tribes, a lack of capacity among tribes to adapt to climate change.
- Limited access to data, training and resources to build adaptive capacity and monitor progress and effectiveness.
- A lack of community-level education and awareness materials to improve the understanding of climate change among tribal member and leaders.
- Limited financial and technical support to adapt to climate change.
- A lack of administrative capacity to understand and manage all of the information and programs coming to tribal governments from a variety of U.S. Government Agencies.
- Additionally, tribes have repeatedly noted the lack of Traditional Ecological Knowledge (TEK) used in EPA's decision-making and policymaking. One approach AIEO will support is to incorporate TEK into its Agency environmental projects and work. TEK is a valuable body of knowledge in assessing the current and future impacts of climate change that has been used by tribes as a valuable tool to adapt to changing surroundings. As EPA develops a greater understanding of TEK alongside our tribal partners, AIEO will support the incorporation of TEK whenever possible.

III. Priority Actions Criteria

OITA is already addressing climate change adaptation in several international and tribal program areas and will continue to pursue opportunities for integrating the effects of climate change into our existing programs, including responding to climate change adaptation-related requests from our tribal partners – as resources and skills permit – especially in border regions.

To prioritize climate change adaptation needs, OITA has developed criteria unique to its mission to identify potential first steps. These criteria are based on a thorough examination of the potential vulnerabilities that face OITA and its mission, in the wake of climate change impacts. The highest priority will be given to those actions that meet several of the following criteria:

- Does the action involve existing partners?
- Does OITA have the necessary resources to meaningfully and effectively help address its partner vulnerabilities in some manner?
- Is this action required in order to enable other actions?
- Can the benefits of this action be measured or documented?
- How extreme is the vulnerability, as informed by relevant EPA, IPCC and USGCRP assessment reports?
- Do the climate vulnerabilities affect U.S. border regions?
- Is OITA the most appropriate lead for the intended action within EPA?

When receiving a request for cooperation in the area of climate adaptation, OITA will consider EPA experience and USG experience more broadly, and when appropriate, explore facilitating linkages with other U.S. agencies and relevant NGOs for implementation support.

IV. Priority Actions

International Priority Actions

- Explore with existing partners, especially along our borders, information needs related to climate literacy, climate vulnerability and climate adaptation options.
- Work with Durban Adaptation Charter cities and their international partners as a means of responding to urban and local government information needs and the need to share city and municipal government experiences, knowledge and best practices. Cities are first responders to climate/weather disasters and are projected to house about 70% of the world's population by 2050⁵.
- The International Office will work with the Arctic Council and the International Maritime Organization to address the effects of climate change, including threats due to increased economic activity and shipping in the Arctic.
- Work with the Organization for Economic Cooperation and Development (OECD) member countries and the U.S. Agency for International Development on development of information, planning and assessment tools and guidelines for assessing vulnerabilities to climate change and sharing experiences and best practices.
- Work as a planning committee member on the annual Resilient Cities Congress, the largest international gathering of urban adaptation experts, policymakers, and local officials, for the purpose of exchanging experiences and knowledge.
- Play a lead role in the U.S. Government review of the Intergovernmental Panel on Climate Change (IPCC) climate assessments, which provide analyses of critical data that are made available to all countries.
- OITA seeks to help institute effective information sharing networks among international organizations and governments, especially among urban centers.

Tribal Priority Actions

- Support the Tribal Science Council's efforts to educate EPA scientists on the use of Traditional Ecological Knowledge (TEK) in EPA's work. For example, AIEO supported a

workshop in 2013 to train EPA staff on the value and applicability of TEK. TEK has been underutilized at the Agency, and is an important source of local, baseline information critical for deploying successful adaptation measures.

- Promote the use of Tribal ecoAmbassador funding to support projects related to climate change adaptation. This EPA program promotes collaborative research in partnership with tribal colleges and universities (TCUs). Professors from TCUs receive funding and technical support from EPA to solve the environmental problems most important to their tribal communities, and are then asked to share their findings with a variety of EPA and tribal audiences.
- Under new guidance issued for the Indian General Assistance Program (IGAP) in May 2013, tribes may use funding for climate change adaptation purposes. This has the potential to have an immediate impact on the adaptability of tribal governments, as every tribe is eligible to receive funding through the IGAP program. AIEO will work through the grants staff at EPA Regional Offices to ensure that tribal partners are aware of funding opportunities.
- Establish relationships with a variety of potential tribal partners, including tribal programs in other U.S. Government Agencies, climate-focused programs at Tribal Colleges and Universities (TCUs), and other Nongovernmental Organizations (NGOs) dedicated to the advancement of climate change adaptation for tribes.
- Host periodic stakeholder meetings on environmental issues, including climate change adaptation. These meetings will bring together a variety of tribal partners to both learn what resources are provided by EPA related to climate change, and also give tribal partners a chance to share their resources and experiences with EPA and other tribal partners.
- Update EPA's annual mandatory training, *Working Effectively with Tribal Governments*, to include information on the vulnerability of tribes to climate change adaptation as needed.
- AIEO will work with the Tribal Program Managers and IGAP Project Officers in each of the NPMs and Regional Offices to support any climate change adaptation efforts that benefit tribes.

V. Metrics and Evaluation

OITA, on a five-year basis, will review emerging scientific understanding on climate impacts and vulnerabilities, OITA programs and Agency practices, as well as its incorporation of traditional ecological knowledge, in the interest of maintaining an effective adaptation implementation strategy.

The international side of the Office of International and Tribal Affairs (OITA) established a Performance Measurement Framework to measure and analyze the results achieved from OITA's engagement with other countries and organizations to advance protection of human health and the domestic and global environment. Until now, EPA's international programs have only been able to collect, analyze, and report information about the results of its activities in a fragmented fashion. This framework has enabled OITA to describe its contributions toward characterizing and addressing environmental risks, improving environmental governance, and promoting environmental cooperation. As part of this framework OITA identified 26 measures that could be used to track, and evaluate progress and effectiveness in conducting our mission and achieving our goals.

OITA will evaluate the performance and effectiveness of its adaptation implementation strategy using measures such as the following:

- Number of partner engagements conducted
- EPA-based tools implemented by assisting organization
- Progress toward achieving identified policy goals
- Partnerships, alliances or networks established or enhanced

Additionally, with climate change adaptation now eligible as a use for Indian General Assistance Program (IGAP) grant funds, AIEO will:

- Monitor how tribes apply for and use funding for climate change adaptation
- Build these experiences into the program where appropriate
- Use these real world examples to improve our technical and financial support for tribes working to adapt to climate change

VI. Table of Examples of Potential Climate Vulnerabilities That May Affect OITA Programmatic Activities

Priority ^a	Climate Change Impacts ^b	EPA Programmatic Impacts ^c			
	Climate Change Impact ^d	Likelihood of Impact ^e	OITA Program and Focus	Likelihood OITA Program Will be Affected by Impact ^f	Examples of Risks if Program Were Impacted
Priority 1: Combating Climate Change by Limiting Pollutants	Coastal areas, especially heavily-populated megadelta regions in South, East and South-East Asia, will be at greatest risk due to increased flooding from the sea and from rivers	Likely	Asia Pacific Rim - The Pacific Ports Clean Air Collaborative (PPCAC) is a voluntary group of domestic (U.S. West Coast) and international participants (Asia Pacific/Pacific Rim) from ports, industry,	High	Sea level rise, an increase in the frequency and magnitude of extreme weather events, and rising temperatures could affect critical infrastructure and port and vessel

<p>Coastal flooding in low-lying areas is very likely to become a greater risk than at present due to sea-level rise and more intense coastal storms, unless there is significant adaptation</p> <p>In new industrialized areas in Asia air quality trends will likely add to heat stress and smog</p>	<p>Very likely</p> <p>Likely</p>	<p>and environmental agencies that share expertise, technology, lessons learned to reduce environmental and sustainability impacts of marine goods movement</p>		<p>operation, as well as access to goods and shipping routes.</p> <p>Additional pollutant/greenhouse gas emissions from ports, ocean-going vessels, and other sources will continue to impact air quality and human health in port cities and in shipping lanes</p>
<p>Increase in annual mean rainfall in East Africa</p> <p>Increase in runoff (and possibly floods) in East Africa</p> <p>Mean sea level rise will contribute to upward trends in extreme coastal high water levels as well as coastal erosion in the future</p>	<p>Likely</p> <p>High Confidence</p> <p>Very likely</p>	<p>East Africa - OITA is working with water utility companies in 10 East African countries, to improve planning for the delivery of water and water services</p>	<p>High</p>	<p>Climate projections for East Africa suggest an annual increase in rainfall and runoff, and more frequent extreme precipitation events, which could impact water management</p> <p>Sea level rise may create issues with salt water intrusion into existing aquifers, calling for different approaches to water resource planning</p>
<p>Annually averaged Arctic sea-ice extent is projected to show a reduction of 22% - 33% by the end of the century</p>	<p>High confidence</p>	<p>Arctic - OITA and the USG play a leading role in Arctic Council deliberations on toxics and climate pollutants</p> <p>OITA plays a lead role as well in the Intl.</p>	<p>High</p>	<p>With increased access and economic activity in the Arctic, additional pollutants may exacerbate climate impacts, making emissions</p>

	<p>Over the next century there will be significant melting of Arctic glacial ice due to warming resulting in a substantial contribution to sea level rise</p> <p>For Arctic human communities, it is virtually certain that there will be negative and positive impacts on infrastructure and traditional lifestyles</p>	<p>Very high confidence</p> <p>High confidence</p>	<p>Maritime Organization's (IMO) development of standards and voluntary measures on polar shipping and pollution prevention and mitigation. OITA also contributes to USG engagement in black carbon assessment and mitigation work</p> <p>(AIEO) works with federally-recognized tribes on enforcement of environmental laws and standards</p>	<p>reductions more difficult</p> <p>Such trends will also affect IMO discussions on an emerging Polar Code, as sea level rises, sea ice retreats, and Arctic Ocean transit increases</p> <p>Projected climate trends in the Arctic will especially affect native peoples and AIEO's ability to enforce standards and laws in a rapidly changing setting</p>
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Footnotes for Summary Table of Examples of Potential Climate Change Vulnerabilities

^a This table summarizes potential vulnerabilities according to the 5 goals or priorities in the EPA Strategic Plan.

^b Climate change impacts/vulnerabilities are based upon the *IPCC Fourth Assessment Report: Climate Change 2007* (see Ref. 3 below).

^c Programmatic Impacts are based upon EPA best professional judgment at this time.

^d Statements on impacts are based upon the *IPCC Fourth Assessment Report: Climate Change 2007* (see Ref. 3 below).

^e Expressions of confidence and likelihood cited in this table are adopted from the *IPCC Fourth Assessment Report: Climate Change 2007* (see Ref. 3 below) as follows:

- | | |
|---|---|
| Very high confidence – At least 9 out of 10 chance of occurring | Virtually Certain – >99% probability |
| High confidence – About 8 out of 10 chance of occurring | Very likely – >90% probability |
| Medium confidence – About 5 out of 10 chance of occurring | Likely – >66% probability |
| Low confidence – About 2 out of 10 chance of occurring | About as likely as not – 33-66% probability |
| Very low confidence – Less than 1 out of 10 chance of occurring | Unlikely – 0-33% probability |
| | Very unlikely – 0-10% probability |
| | Exceptionally unlikely – 0-1% probability |

^f Assessment of possible programmatic impact is based upon OITA's best professional judgment. **High** assumes that the program is very likely to be impacted; **Medium** assumes that the program has a moderate chance of being affected; **Low** assumes that there is a slight chance that the program will be impacted. This assessment is based on best professional judgment within OITA.

¹ U.S. Global Change Research Program, *Global Climate Change Impacts in the United States*, 2009.

³ IPCC Contribution of Working Group II to the 4th Assessment Report, Summary for Policymakers, Cambridge Univ. Press, UK, 2007.

⁴ EPA Climate Change Adaptation Plan, 2012.

⁵ World Bank, *Cities and Climate Change: An Urgent Agenda*, 2010.

VII. Conclusion

OITA is dedicated to advancing EPA's priorities of climate change adaptation and will work within its authorities to achieve these goals with our international and tribal partners.