DRAFT INTERIM GUIDANCE

CONSIDERING CLIMATE CHANGE IN NATIONAL PARK SERVICE NEPA ANALYSIS

INTRODUCTION

A growing body of scientific research, published in peer reviewed journals and synthesized by groups such as the Intergovernmental Panel on Climate Change and the U.S. Climate Change Science Program, depicts a global climate that is changing. Research also shows that human activities, especially emissions of greenhouse gases into the atmosphere, contribute to this changing climate. Case law indicates that courts are increasingly viewing climate change as an established reality. Therefore, we recommend that (1) climate change stemming from greenhouse gas emissions and (2) certain impacts to park resources and values resulting from climate change should be viewed as reasonably foreseeable and should be considered during the National Environmental Policy Act (NEPA) planning process.

The purpose of this guidance is to help NPS NEPA practitioners in evaluating the issue of climate change during the NEPA process. When considering climate change in a NEPA document, two key questions should be addressed:

1) What is the contribution of the proposed project to climate change, as indicated by greenhouse gas emissions associated with the project?

2) What is the impact of climate change on park resources, and specifically, the resources that will be impacted by the project?

This guidance outlines a number of recommended steps for considering climate change throughout the NEPA analysis process. However, central to those recommendations are two key points in regards to the questions posed above:

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1) In instances where the project's contribution to climate change has been retained as an issue for detailed analysis, you should disclose greenhouse gas emissions associated with project alternatives.

2) In instances where reasonably foreseeable impacts to park resources stemming from climate change are identified, you should analyze the impacts of project alternatives on those resources in the context of the current as well as anticipated future environmental conditions.

Although this guidance is focused on the preparation of internal NEPA documents, the NPS, when commenting on other agencies' NEPA documents, should recommend consideration of the above questions. It should be noted that the field of climate change science is dynamic and that this guidance may be adapted to reflect the changing state of the science. This guidance should be considered interim guidance pending further clarification from the Council on Environmental Quality and/or the Department of the Interior on considering climate change in NEPA documents.

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PART I. INTEGRATING CLIMATE CHANGE ANALYSIS IN YOUR NEPA DOCUMENT

SECTION 1. WHAT IS THE CONTRIBUTION OF THE PROPOSED PROJECT TO CLIMATE CHANGE, AS INDICATED BY GREENHOUSE GAS EMISSIONS ASSOCIATED WITH THE PROJECT?

A) Should the issue of the project's contribution to climate change be retained for detailed analysis or dismissed?

The evaluation of a project's contribution to climate change should be treated similarly to any other issue considered during the NEPA process. The initial evaluation, which takes place during the scoping process, involves asking whether the project's contribution to climate change will be retained for detailed analysis. To determine this, consider the following factors:

- *The type of project*. If you are working on a project involving major transportation planning or road construction, energy development, major facilities construction, or major visitor services planning, you should strongly consider retaining the issue of the project's contribution to climate change for detailed analysis.

- *The project's anticipated greenhouse gas emissions.* Examine the ways that the project will create greenhouse gas emissions and increase the park's carbon footprint. Consider ways that the project may reduce greenhouse gas emissions or offset them. The process could be qualitative, e.g., "The project would likely result in substantial increases in vehicle traffic in the park." The process could also be quantitative, e.g., "The project would be expected to increase gasoline consumption in the park by *x* gallons. Since every gallon of gasoline burned releases about twenty pounds of carbon dioxide, the result would be an increase in carbon dioxide emissions of about 20*x* pounds." Alternatively, the NPS's CLIP Tool, which facilitates the creation of a park greenhouse gas emissions inventory, could be used to create a more comprehensive quantitative assessment (see Part II below for more information on the CLIP Tool). Although a quantitative examination of project-related greenhouse gas emissions is preferable, it may not be practicable in all cases.

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- *The project's anticipated greenhouse gas emissions relative to those of the park, local area, or state.* Avoid setting the context of your initial screening so broad as to render it meaningless. During your initial screening, you could choose to consider anticipated greenhouse emissions of the project in comparison with park, local, or state emissions. If the amount of increase or decrease of emissions is small compared to the park's baseline emissions or to local or state emissions, it is likely that the project's contribution to climate change can be dismissed. Sources for state greenhouse gas emissions information include the Environmental Protection Agency and the Department of Energy's Energy Information Agency (See Part II for web links).

B) How should you address the project's contribution to climate change if you have dismissed the issue?

If you have determined that the issue of the project's contribution to climate change will not be retained for detailed analysis, discuss and dismiss the issue as you would dismiss any other NEPA issue, in the issues and impact topics section of the NEPA document's Purpose of and Need for Action chapter. There are several options for dismissing the issue.

- You may choose to dismiss the issue under its own "carbon footprint" heading, describing the technique used to dismiss the issue and conclusion.

- You may choose to dismiss the issue under the "air quality," "energy resources," or "energy conservation potential/sustainability" headings, again describing the technique used to dismiss the issue and conclusion.

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C) How should you address the project's contribution to climate change if you have retained the issue for detailed analysis?

If you have determined that you will retain the issue of your project's contribution to climate change for detailed analysis, you need to incorporate the issue throughout the NEPA document. Below are recommendations for how to incorporate consideration of the issue of the project's contribution to climate change into specific sections of the document.

Purpose of and Need for Action

- *Objectives*: You may choose to include in your document an objective related to minimizing project related greenhouse gas emissions and contributions to climate change.

- *Issues and Impact Topics*: There are several ways you can address the issue of the project's contribution to climate change in the document. We suggest incorporating the issue under an impact topic called "carbon footprint." However, you may also choose to address the issue under the "air quality," "energy resources," or "energy conservation potential/sustainability" impact topics.

- *Scoping Process and Public Participation*: If concerns over emissions and contributions to climate change are raised during public scoping, they should be described under the issue.

Alternatives

- *Consider opportunities to mitigate greenhouse gas emissions.* When developing alternatives, consider how they might be formulated to minimize, reduce, or offset emissions.

- *Evaluate adaptive management approaches*. When uncertain outcomes are associated with management actions, consider how adaptive management can be used as a component of your alternatives.

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- *Identifying the environmentally preferred alternative*. You may choose to take the alternatives' contributions to climate change through greenhouse gas emissions into account during the identification of the environmentally preferred alternative.

Affected Environment

- *Include your climate change related impact topic*. If you determine that you will analyze the project's contribution to climate change under the carbon footprint, air quality, energy resources, or energy conservation potential/sustainability impact topic, describe the baseline greenhouse gas emissions information in this section. We strongly recommend that you develop a quantitative description of your baseline unless there is a compelling reason to do otherwise. The NPS's CLIP Tool is an available resource for producing a quantitative baseline greenhouse gas emissions inventory for the park.

Environmental Consequences

- *Disclose greenhouse gas emissions associated with each alternative under the carbon footprint impact topic (or air quality, energy resources, etc.).* Analysis of the project's contribution to climate change is made challenging by a number of factors. First, it is not possible to attribute a particular change in climate to a particular source of greenhouse gas emissions. Furthermore, the effects of greenhouse gases emitted at a particular locale are not correspondingly localized. Nonetheless, increases (or decreases) in greenhouse gas emissions caused by action alternatives can be examined relative to the no action alternative. We strongly recommend that you develop a quantitative description of greenhouse gas emissions associated with each of your action alternatives unless there is a compelling reason to do otherwise. The NPS's CLIP Tool is an available resource for modeling greenhouse gas emissions associated with each action alternative, which can then be compared to the baseline. It is not possible, given the current state of science, to describe the intensity of the alternatives' contribution to climate change. You should include language in your document explaining that the means to describe the specific contribution of your

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project to climate change beyond a disclosure of associated greenhouse gas emissions are unavailable. Despite the inability to provide a more complete analysis, your disclosure of greenhouse gas emissions associated with project alternatives will provide the decision-maker with additional information to use in choosing between alternatives and indicate to the public that the issue of project-related contributions to climate change received consideration and analysis.

- *Cumulative impacts and the carbon footprint impact topic* (or air quality, energy resources, etc). Cumulative impacts result from the impact of a project when added to impacts of other past, present, and reasonably foreseeable future actions regardless of who takes such actions. Since greenhouse gas emissions integrate across the earth's atmosphere, it is contributions of greenhouse gases from sources throughout the planet that, taken cumulatively, contribute to climate change. Given the breadth of this context and the current state of science, it is not possible to provide a meaningful analysis of the cumulative impact of greenhouse gas emissions associated with any number of projects. However, we recommend an acknowledgment that climate change results from incremental emissions of greenhouse gases from around the globe, and an acknowledgement of the gravity of climate change as an environmental issue. It may not be possible to provide more meaningful analysis in this section. However, you should be certain to describe the known or reasonably foreseeable impacts of climate change on specific park resources as part of the discussion of the affected environment for those particular impact topics.

<u>Making a Finding of No Significant Impact</u>

In cases where an environmental assessment is prepared, we suggest that a finding of no significant impact is not inconsistent with the disclosures described above. We should recognize that greenhouse gas emissions contribute to climate change and use the descriptions of emissions associated with project alternatives to inform decision-making. We should recognize the gravity of the incremental effects of greenhouse gas emissions as manifested through climate change. However, individual project decisions of the scope and scale typically evaluated in an environmental assessment would not likely

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involve actions that can be meaningfully connected to significant climate change effects. Furthermore, preparation of an environmental impact statement solely on the basis of the significance of climate change as a cumulative impact stemming from global greenhouse gas emissions would not provide more meaningful information to the decision -maker or the public than that presented in the environmental assessment.

SECTION 2. WHAT IS THE IMPACT OF CLIMATE CHANGE ON PARK RESOURCES, AND SPECIFICALLY, THE RESOURCES THAT WILL BE IMPACTED BY THE PROJECT?

Some parks are already facing changes to vegetation, wildlife, and water resources as a result of climate change. Research predicts that many parks will see changes to such resources in upcoming decades. It is important to address the impacts of climate change on the park environment in NEPA documents. Failing to consider current and anticipated impacts may lead to decisions that do not adequately consider changing conditions and changing resources. The impact of climate change on park resources is not dependent on the magnitude of the project; even small projects may involve resources that are being or will be impacted by climate change. It is possible that you may dismiss the issue of your project's contribution to climate change while still considering the impact of climate change on park resources as described in this section. Below are recommendations for how to incorporate consideration of the impact of climate change on park resources into specific sections of the NEPA document.

<u>Purpose of and Need for Action</u>

- *Describe climate change impacts on your park overall*. Even though climate change is not an "action" in the conventional sense, human actions, namely greenhouse gas emissions, contribute to climate change. You may wish to generally describe the currently known or predicted effects of climate change on your park in the Related Plans and Actions section of the document. This is a means of indicating that the consideration of climate change has helped shape the planning process.

- *Determine your impact topics and whether climate change is impacting that topic or will likely impact that topic in the foreseeable future*. Begin your analysis by

considering which impact topics you will be analyzing in your document. If you will be analyzing topics that are or will be affected by climate change (e.g., vegetation, wildlife, water), the impacts of climate change should be discussed for these topics in the applicable section of the affected environment.

Alternatives

- *Consider actions that are workable in the context of a changing environment*. When developing your alternatives, consider what management options may work best with the future environment. Scenario planning is one available tool that allows planners to consider a range of possible futures in which management options will be carried out. Consider whether and how your alternatives may serve to make your system more resilient.

- *Consider the long-term*. While NPS NEPA planning generally addresses a 15-20 year or shorter time frame, it may be wise to consider the long-term anticipated environmental condition to choose the best range of alternatives.

- *Consider adaptive management approaches when possible*. When uncertain outcomes are associated with management actions, consider how adaptive management can be used as a component of your alternatives. Alternatives that you develop in the present may include elements that adapt to predicted future impacts of climate change if and when such impacts are observed.

Affected Environment

- *Discuss known and predicted impacts of climate change on impact topics comprising the affected environment*. The affected environment section describes baseline conditions of impact topics. For those impact topics whose conditions are changing or are predicted to change because of climate change, you should also describe the shifts that will occur to those baseline conditions as a result of climate change. You should develop of thorough literature review that addresses predicted impacts of climate change on your park's geographic region. Use literature collected during this

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review to assist in writing the affected environment. Although not yet available, the office of the NPS Climate Change Coordinator is currently preparing Bioregional Impact Summaries that will synthesize existing literature and describe the predicted impacts of climate change for 11 distinct bioregions. These summaries should serve as a valuable resource. You may choose to discuss possible changes beyond the life of your plan, if those changes are reasonably foreseeable and will change the direction of park management over time.

Environmental Consequences

- *Evaluate the impacts of alternatives in the context of a changing environment.* If climate change and project alternatives would affect an impact topic, analyze the impacts of your alternatives in a manner that accounts for known and predicted changes to the resource resulting from climate change. For example, if an alternative's impact on a topic would be of a particular intensity in the present but would become more severe if anticipated climate change impacts came into fruition during the life of the plan, you should disclose this.

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PART II. TOOLS & RESOURCES

The CLIP Tool

The Climate Leadership in Parks (CLIP) Tool is a computer program based in Microsoft Excel that facilitates creation of a park greenhouse gas emissions inventory. Developed as a component of the NPS Climate Friendly Parks program, the CLIP Tool consists of two modules, with Module 1, the Inventory Module, being the module in which a greenhouse gas emissions inventory is created. The inventory is created by entering data on a variety of park activities into Module 1, which then automatically calculates greenhouse gas emissions associated with inputted park activities.

Although not created for use in NEPA analysis, the functionality of the CLIP Tool can support the NEPA process by providing a means to 1) create a baseline greenhouse gas emissions inventory representing the carbon footprint of the no-action alternative and 2) model greenhouse gas emissions levels that would result from the implementation of action alternatives.

More information on the CLIP Tool and the Climate Friendly Parks program is available at www.nps.gov/climatefriendlyparks. The CLIP Tool itself is also available for download at this website. While Climate Friendly Parks encourages participation in the program, parks are not required to join Climate Friendly Parks in order to download and use the CLIP Tool, and the creation of a greenhouse gas emissions inventory can be done independently of other activities associated with the program.

NPS Climate Friendly Parks Program

http://www.nps.gov/climatefriendlyparks

From the NPS Climate Friendly Parks website: "The Climate Friendly Parks (CFP) Program, a collaboration of the National Park Service and the U.S. Environmental Protection Agency, provides national parks with management tools and resources to address climate change. The program aims to provide national parks with comprehensive support to address climate change both within park boundaries and the surrounding community." The website contains information on the CFP program and climate change related links and resources.

U.S. Environmental Protection Agency Climate Change Website

http://www.epa.gov/climatechange/

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U.S. Climate Change Science Program

http://www.climatescience.gov/

U.S. Forest Service Climate Change Resource Center

http://www.fs.fed.us/ccrc/

Intergovernmental Panel on Climate Change

http://www.ipcc.ch/

U.S. Department of the Interior Adaptive Management Website

http://www.doi.gov/initiatives/AdaptiveManagement/index.html

Energy Information Administration, U.S. Department of Energy

http://www.eia.doe.gov/

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PART III. GLOSSARY

Impact topics – "natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources is evaluated in the impact section of an EA or an EIS." (DO-12 sec. 9.1)

Issues – "In NEPA, issues are environmental, social, and economic problems or effects that may occur if the proposed action of alternatives (including no action) are implemented or continue to be implemented." (DO-12 sec. 9.1)

Carbon footprint - the sum of all emissions of CO2 (carbon dioxide), which were induced by your activities in a given time frame. Usually a carbon footprint is calculated for the time period of a year. Other greenhouse gases which might be emitted as a result of your activities are e.g. methane and ozone. These greenhouse gases are normally also taken into account for the carbon footprint. They are converted into the amount of CO2 that would cause the same effects on global warming (this is called equivalent CO2 amount).

Climate Change - Global climate change (GCC) is a change in the average weather of the earth that can be measured by wind patterns, storms, precipitation, and temperature.

Greenhouse Gases - Naturally occurring greenhouse gases include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). Human activities (e.g. fossil fuel combustion in stationary and mobile sources, agriculture, and waste generation) lead to increased concentrations of these gases in the atmosphere. In addition, there are other more powerful greenhouse gasses— hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6)—called high-global warming potential (high-GWP) gases that are created in smaller quantities by industrial processes such as aluminum, iron, and steel production. Greenhouse gasses contribute to climate change on a global scale. In contrast, the impacts of criteria air pollutants (CAPs), such as sulfur dioxide (SO2), nitrogen oxides (NOx), volatile organic compounds (VOCs), particulate matter (PM10 and PM2.5), and carbon monoxide (CO), are typically local and regional in nature.

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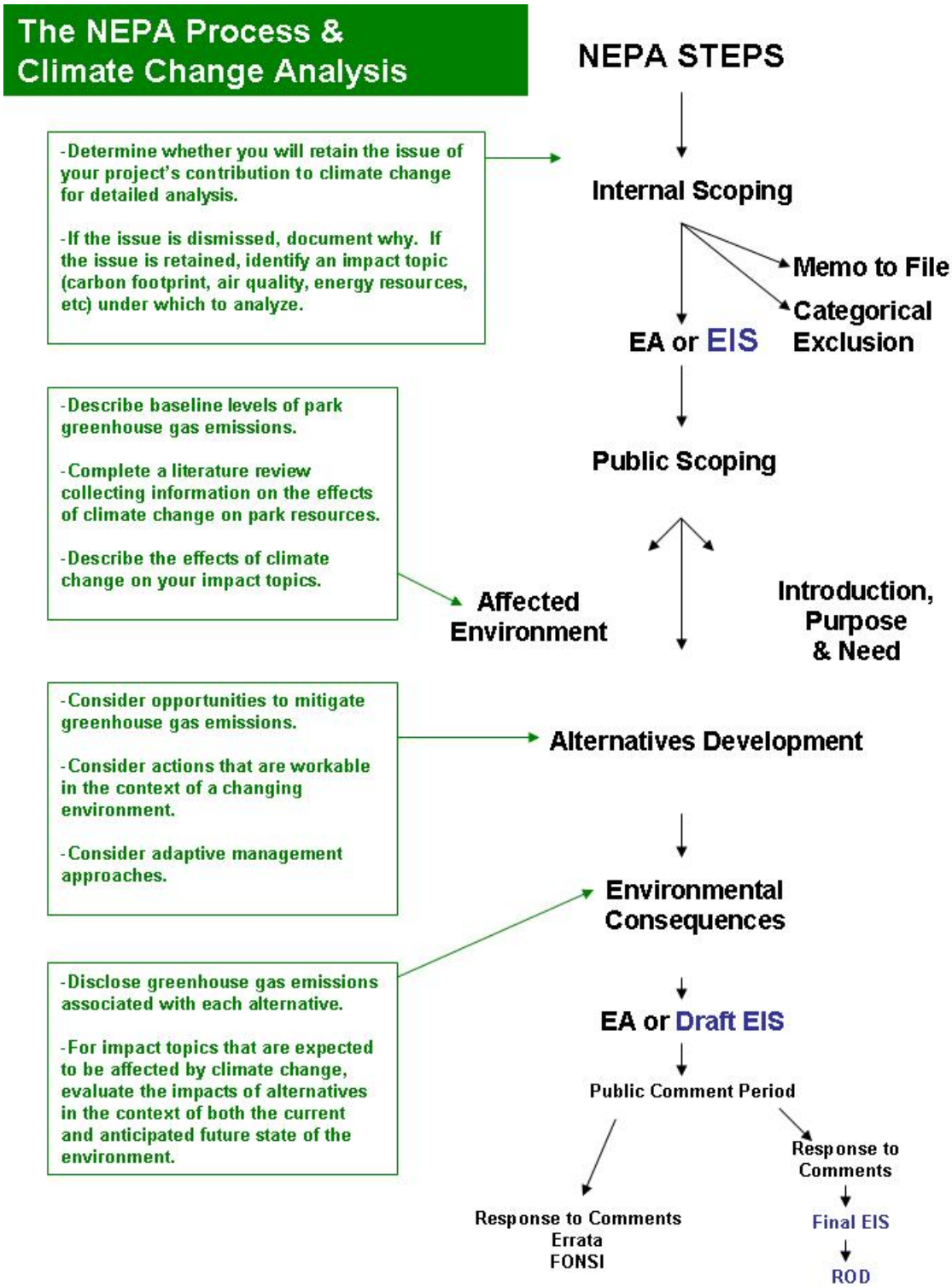
The NEPA Process &
Climate Change Analysis
NEPA STEPS
-Determine whether you will retain the issue of your project's contribution to climate change for detailed analysis.
-If the issue is dismissed, document why. If the issue is retained, identify an impact topic (carbon footprint, air quality, energy resources, etc) under which to analyze.
Internal Scoping
Memo to File
Categorical Exclusion
EA or EIS
-Describe baseline levels of park greenhouse gas emissions.
-Complete a literature review collecting information on the effects of climate change on park resources.
-Describe the effects of climate change on your impact topics.
Public Scoping
Affected Environment
Introduction, Purpose & Need
-Consider opportunities to mitigate greenhouse gas emissions.
-Consider actions that are workable in the context of a changing environment.
-Consider adaptive management approaches.
Alternatives Development
Environmental Consequences
-Disclose greenhouse gas emissions associated with each alternative.
-For impact topics that are expected to be affected by climate change, evaluate the impacts of alternatives in the context of both the current and anticipated future state of the environment.
EA or Draft EIS
Public Comment Period
Response to Comments
Errata
FONSI
Response to Comments
Final EIS
ROD