2010 NO. 4 RMMLF-INST PAPER NO. 3

Rocky Mountain Mineral Law Foundation

Special Institute on the National Environmental Policy Act
October 28-29, 2010

Paper 3

WHEN AND HOW TO ANALYZE CLIMATE CHANGE UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT

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Introduction

On February 18, 2010 the Council on Environmental Quality (“CEQ”) released its “Draft NEPA Guidance On Consideration of The Effects of Climate Change and Greenhouse Gas Emissions.” [FN1] The Draft Guidance aims to ensure that agencies identify proposed actions that might increase greenhouse gas (GHG) emissions or compound effects from climate change, and provides some initial advice for analyzing both. As a spur to agencies, the Draft Guidance is a step in the right direction. It clarifies that agencies cannot rely on the excuse that climate change is a global collective action problem in order to avoid analyzing local GHG emissions and climate effects. Yet integrating climate change into NEPA analysis is a complex task that has challenged agencies, litigants, and courts alike. Not surprisingly, the Draft Guidance does not resolve all of the uncertainties. To provide additional direction on various open questions, this paper supplements the Draft Guidance with analysis of recent NEPA case law and relevant agency regulations.

The Draft Guidance itself focuses on two main issues at the intersection of climate change and NEPA analysis. First, when is it appropriate for an agency to quantify and evaluate the amount of GHG emissions generated by a proposed action? Second, when is it appropriate for an agency to consider the effects of climate change in its environmental analysis of a proposed action? This paper addresses these questions in turn. With respect to the first, there is no bright-line rule for when an agency must quantify and evaluate the GHG emissions from a proposed action. NEPA itself requires analysis of a proposed action's impacts on air quality, but does not otherwise provide guidance concerning GHG emissions. [FN2] Courts that have considered the issue vary concerning what triggers an obligation to quantify GHG emissions in NEPA documents. [FN3] The Draft Guidance approaches this issue by providing agencies and practitioners with what might appear to be a trigger: If the proposed action emits GHG emissions in excess of 25,000 metric tons per year ("tpy"), the NEPA document should quantify the amount of GHG emissions and qualitatively discuss the environmental effects of those emissions. [FN4] At the same time, the Draft Guidance stresses that this 25,000 tpy indicator is not a minimum threshold. Instead, the Draft Guidance emphasizes that an agency has broad discretion to provide or omit an analysis of GHG emissions under NEPA's "rule of reason." [FN5] Part I of the paper contextualizes the Draft Guidance and aims to clarify further when agencies should include an analysis of GHG emissions versus when the agency has discretion to omit such an analysis.

With respect to the second question, the Draft Guidance states that a NEPA environmental analysis should consider the reasonably foreseeable effects of climate change on a proposed action. Climate change is already affecting the environment and is anticipated to have additional effects in the future. For example, rising temperatures have already caused noticeable changes in the timing of the snowmelt in the western United States. [FN6] An industrial process that requires significant quantities of water could therefore be significantly affected by dwindling water supplies in the West. Accordingly, the Draft Guidance states "[c]limate change effects should be considered in the analysis of projects that are designed for long-term utility and located in areas that are considered vulnerable to specific effects of climate change within the project's timeframe." [FN7] Part II of the Paper takes a closer look at the relevant effects of climate change and how they should be analyzed in a NEPA document.

We rely primarily on the Draft Guidance itself, relevant NEPA regulations, and federal case law addressing NEPA challenges to proposed agency actions based on failure to consider climate change. When useful, we also refer to interpretations of the California Environmental Quality Act ("CEQA"), which has recently incorporated climate change analysis into its environmental assessment procedures. [FN8] While the CEQA Guidelines are not controlling at the federal level, they provide a more complete framework for integrating climate change into an environmental analysis.

We conclude with a brief discussion about the future of NEPA and climate change. The CEQ's guidance is currently in draft form and subject to revisions. We therefore highlight three areas where CEQ could provide more clarity and guidance. This discussion provides a summary of the main challenges associated with integrating climate change into NEPA documents.

I. Analyzing the Effects of a Proposed Action on Climate Change

The first section of the Draft Guidance tackles the issue of when it is "appropriate for the agency to quantify and disclose its estimate of the expected annual direct and indirect GHG emissions in the environmental documentation for the proposed action." [FN9] The answer involves a two-step process. First, the agency must make a threshold determination that it is appropriate to analyze GHG emissions. [FN10] Then, the agency must resolve the issue of how to analyze and quantify GHG emissions in a NEPA document. [FN11]

A. When An Agency Should Provide an Analysis of Climate Change

The Draft Guidance provides two standards for determining whether an agency should analyze the GHG emissions from a proposed action in a NEPA document. First, CEQ proposes that:

[I]f a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO2-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public. [FN12]

Alternatively, CEQ proposes that if a project is "anticipated to emit GHGs to the atmosphere in quantities that the agency finds may be meaningful," [FN13] the NEPA analysis should similarly quantify and disclose GHG emissions.

Before discussing these two standards further, it is important to highlight what the Guidance addresses and what it fails to address. On the affirmative side, the Guidance clarifies that the threshold determination of whether to analyze GHG emissions is now an important and necessary step in the NEPA review process. Previously, the CEQ had not taken a stance on whether agencies should analyze GHG emissions. The Draft Guidance, at the very least, clarifies that NEPA encompasses consideration of GHG emissions. Yet, on the negative side, the Guidance does not provide direction concerning how to determine whether GHG emissions have "significant" effects on the environment and therefore trigger NEPA's requirement to undertake a full-blown EIS. [FN14] Rather the Draft Guidance is directed at the threshold determination of whether emissions warrant consideration, leaving to the agencies the difficult task of sorting out when that initial determination might ripen into a finding of significant effects. (Section I.B.iii, below, supplements the Draft Guidance and provides the reader with some insights into the determination of significance for GHG emissions.)

i. Direct Emissions of 25,000 Metric Tons of CO2 per Year

The Draft Guidance attempts to provide agencies and practitioners with a quantitative standard - namely the proposed 25,000 tpy indicator. It states that 25,000 tpy is "an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs." [FN15] Accordingly, where the proposed action is subject to GHG emission accounting requirements because emissions exceed 25,000 tpy, practitioners should expect the NEPA documents to quantify and evaluate those GHG emissions.

Practitioners and agencies should not rely exclusively on the 25,000 tpy indicator, however, to determine whether the NEPA documents should include an analysis of GHG emissions. CEQ is careful to note that this suggested indicator is not "an absolute standard of insignificant effects." [FN16] The Draft Guidance therefore correctly states that 25,000 tpy is not the only trigger for assessing a proposed action - an agency must also consider whether the quantity of emissions is meaningful. [FN17]

Furthermore, the proposed indicator of 25,000 tpy of CO2 emissions, if relied on exclusively, may be susceptible to a NEPA claim. An agency's decision to exclude an analysis of GHG emissions based solely on the quantitative trigger may be challenged as arbitrary and capricious. In a footnote, CEQ explains that it derived the 25,000 tpy indicator from the EPA's Mandatory Greenhouse Gas Reporting Rule ("MRR") and that EPA's rationale for selecting 25,000 tpy is "pertinent to the presentation of NEPA analysis as well." [FN18] But, the MRR's 25,000 tpy amount was not chosen because of its relationship to environmental impacts, nor whether that amount triggers NEPA's standard for "significant impacts." EPA selected the 25,000 metric ton threshold because it deemed 25,000 to be a number that was low enough to capture the major emission sources, yet high enough to preclude small sources. CEQ's rationale for selecting 25,000 tpy does not, on its face, appear related to an analysis of environmental impacts. Reliance on such a figure alone could therefore be vulnerable to challenge. [FN19]

The vulnerability of CEQ's proposed indicator of 25,000 tpy is underscored by the fact that the EPA recently adopted a different threshold - 75,000 tpy - in its final rule requiring consideration of GHG emissions in permitting for stationary sources. On Thursday May 13, 2010 EPA released its final rule entitled: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, which requires all projects that increase net GHG emissions by at least 75,000 tpy carbon dioxide equivalent, to obtain a Prevention of Significant Deterioration permit. [FN20] The Tailoring Rule further acknowledges that the 25,000 tpy threshold is too low for use in regulating sources. The EPA's varying positions provide grist for arguments challenging an agency's reliance on 25,000 tpy to omit (or include) an analysis of GHG emissions for NEPA purposes. [FN21] The relationship

between the quantitative standard of 25,000 tpy and the impact of emissions on the environment is sufficiently unclear as to caution against sole reliance on the numerical indicator.

An agency's decision whether to undertake an analysis of GHG emissions for a small project-level decision should include additional considerations. One of these is whether the agency had an obligation to prepare a programmatic EIS. Even though the project itself may emit GHG emissions below 25,000 tpy, the project may nonetheless be part of a broader, programmatic action. This is particularly common in circumstances involving long-range energy, transportation, and resource management programs. [FN22] In these scenarios, the agency may have an obligation to evaluate aggregate GHG emissions in a programmatic EIS. The Draft Guidance recommends the use of programmatic EISs:

For example, if GHG emissions or climate change and related effects in general are included in a broad (i.e., programmatic) EIS for a program, subsequent NEPA analyses for actions implementing that program at the project level should ... tier from the programmatic statement and summarize the relevant issues discussed in the programmatic statement. [FN23]

Failure to conduct such a programmatic analysis may therefore be the basis for a valid NEPA challenge and subsequent injunction of the proposed action. [FN24]

Another consideration is whether the agency used a valid categorical exclusion to exempt a small project-level decision from a NEPA analysis of GHG emissions. Pursuant to 40 CFR § 1507.3, agencies do have the authority to list certain actions that are excluded from NEPA. The Draft Guidance advises agencies to use this procedure to identify actions for which GHG emissions and other environmental effects are neither individually nor cumulatively significant. [FN25]

Finally, an agency may propose to mitigate GHG emissions below the 25,000 tpy threshold as part of its GHG analysis. For example, the agency might propose, "enhanced energy efficiency, lower GHG-emitting technology, renewable energy, planning for carbon capture and sequestration, and capturing or beneficially using fugitive methane emissions." [FN26] Any proposed mitigation measures should be scrutinized, however, to ensure their "permanence, verifiability, enforceability, and additionality." [FN27]

ii. "Meaningful Emissions"

In addition to the 25,000 tpy indicator discussed above, the Draft Guidance also suggests that agencies should analyze GHG emissions for projects with emissions "in quantities that the agency finds may be meaningful." [FN28] This section attempts to provide a framework for assessing whether GHG emissions are "meaningful," thereby requiring an agency to provide an analysis of those emissions under NEPA.

In determining whether emissions are meaningful, the agency must analyze both the direct and indirect emissions of the proposed action.

[W]here a proposed Federal action that is analyzed in an EA or EIS would be anticipated to emit GHGs to the atmosphere in quantities that the agency finds may be meaningful, it is appropriate for the agency to quantify and disclose its estimate of the expected annual *direct and indirect* GHG emissions in the environmental documentation for the proposed action. [FN29]

The requirement to analyze both the direct and indirect emissions from a proposed action may be crucial. For example, a proposed oil-and-gas pipeline might not emit direct emissions in excess of 25,000 tpy. It would not therefore exceed the Draft Guidance's indicator level discussed in the previous section. As such, the lead agency might omit an analysis of GHG emissions from the NEPA documents. That same pipeline might, however, contribute to the increased downstream consumption of fossil fuels. The resulting indirect emissions could add up to a "meaningful" quantity of GHG emissions, thereby requiring an analysis of GHG emissions per the Draft Guidance. This example demonstrates the subtle difference between the Draft Guidance's two

distinct tests for determining whether to analyze GHG emissions - the 25,000 tpy indicator for direct emissions versus the notion of a "meaningful" quantity of indirect and direct emissions.

The issue of indirect emissions arose in the recent case of *Sierra Club v. Clinton* [FN30] where the court recognized an agency's ability to calculate the downstream GHG emissions associated with the permitting of the Alberta Clipper ("AC") Pipeline. The plaintiffs in the case sought an injunction of the AC Pipeline's permit on the grounds that the lead agency was required to consider the indirect emissions from "the refineries that will cause additional air, water, and climate pollution" and "increased consumption of liquid petroleum-based fuels on air quality and climate change." [FN31] The court refused to grant the injunction, however, because the agency had actually considered indirect downstream emissions. The EIS specifically considered "the potential GHG emissions associated with the construction of the AC Pipeline, operation of the AC Pipeline, refining heavy crude oil, refinery upgrades, new refineries, and end use refined petroleum products." [FN32] The Draft Guidance similarly suggests that agencies should consider emissions associated with all phases and elements of a project to the extent feasible and practicable. [FN33]

Yet neither the Draft Guidance nor the court in *Sierra Club v. Clinton* provide much direction with respect to the extent of downstream emissions to consider. In other words, how indirect can the emissions be, and still be traced to the project? Practitioners might therefore invoke the analogous notion of "indirect effects" to determine the appropriate scope of indirect emissions. Based on CEQ regulations, "indirect effects" are those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." [FN34] The Supreme Court has defined "reasonably foreseeable" to mean "a reasonably close causal relationship between the environment and the alleged cause," a relationship the Court analogized to "the familiar doctrine of proximate cause from tort law." [FN35] As a rule of thumb then, practitioners should consider reasonably foreseeable indirect GHG emissions along with direct emissions to determine whether a proposed action emits "meaningful emissions."

Agencies may use the scoping process to bound the analysis of indirect emissions. The Draft Guidance notes that the scope of the analysis of indirect emissions "must be bounded by limits of feasibility in evaluating upstream and downstream effects of federal agency actions." [FN36] The scoping process is precisely the tool to realize this advice. [FN37] This is achieved by engaging both agency experts and the public to identify the main issues for review (i.e. those sources of indirect emissions that should be considered). Based on this input, the agency can set spatial and temporal limits on reasonably foreseeable indirect GHG emissions.

In *North Carolina Alliance for Transportation Reform, Inc. v. US Department of Transportation*, the court approved of the agency's use of the scoping process to limit GHG emissions considerations. [FN38] In that case, the lead agency had involved EPA, the North Carolina Division of Air Quality, and the local county's air quality department in the initial scoping process for a 34.2 mile federally-funded highway project. [FN39] "None of these agencies directed the Defendants to evaluate potential impacts of greenhouse gas emissions on global warming." [FN40] Based in part on this advice, the lead agency omitted such an analysis, and the court upheld that decision. It is possible, however, that the CEQ guidance itself will render the total exclusion of GHG emissions analysis increasingly outside the norm of agency behavior. While the scoping process will continue to be an appropriate venue for bounding the analysis, it may become increasingly difficult to justify the complete omissions of any consideration of GHG emissions in certain contexts.

iii. Examples and Case Law Requiring An Analysis of GHG Emissions

The two previous sections addressed the Draft Guidance's 25,000 tpy indicator for direct GHG emissions as well as the concept of a "meaningful" quantity of direct and indirect GHG emissions. This section supplements the discussion of those tests with a set of concrete examples from the Draft Guidance and recent federal court decisions.

In the Draft Guidance, CEQ suggests that "approval of a large solid waste landfill; approval of energy facilities such as a coal-fired power plant; or authorization of a methane venting coal mine" would warrant a discussion of GHG impacts. [FN41] Conservative estimates of GHG emissions from these identified projects are respectively:

• 400,000 tpy for a landfill with 700,000 tpy waste capacity, [FN42]

• 5,00,000 tpy for a typical 670 MW coal-fired plant, [FN43] and

• 3,700,000 tpy for the West Elk Mine Located in Colorado [FN44]

These examples suggest that the CEQ is contemplating a NEPA analysis of GHG emissions for proposed actions with direct emission levels well in excess of 25,000 tpy, and therefore do not provide much direction with respect to smaller projects that may nonetheless trigger NEPA emissions analysis.

Similarly, courts have required NEPA analysis of high-quantity projects. For example, in *Center for Biological Diversity v. NHTSA*, the Ninth Circuit reviewed an EA prepared for a nation-wide rulemaking to set the Corporate Average Fuel Standards ("CAFE") for light trucks, model years 2005-2011. [FN45] Due to the nationwide scope of this rulemaking, the action involved a large quantity of GHG emissions. In fact, the EA catalogued the total tonnage of emissions from light trucks as between 4,966 and 4,979 million metric tons per year. [FN46] Nonetheless, the EA failed to discuss the impacts of these emissions on the grounds that "climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control ...." [FN47] The court rejected this reasoning and remanded the EA to the agency for further analysis, emphasizing that "these rules are 'collectively significant actions taking place over a period of time."' [FN48] An analysis of the environmental effects of the rulemaking on climate change was therefore necessary to comply with NEPA.

Courts are less likely to require an analysis of GHG emissions for a project-level decision. In *North Carolina Alliance for Transportation Reform, Inc*., petitioners challenged the EIS prepared for three federally-funded transportation improvement projects around Winston-Salem. In total, the three projects amounted to 34.2 miles of new highway [FN49] and had the potential to increase vehicle miles driven by 218,000 miles travelled countywide daily. [FN50] Nonetheless, due in part to the fact that this was an individual project-level action, the court upheld the agency's decision to forego quantifying and analyzing GHG emissions.

B. How to Analyze Emissions From A Project: Direct, Indirect, and Cumulative Effects

Once an agency has determined that it is appropriate to analyze the GHG emissions from a proposed action, it is then faced with the second step of describing the environmental effects of those GHG emissions. The following three sections explain how the NEPA documents should (i) evaluate the direct effects of a proposed action, (ii) evaluate the cumulative effects of a proposed action, and (iii) determine whether those direct and cumulative effects are "significant" within the meaning of NEPA (thereby requiring a full EIS).

i. Analyzing the Direct Effects Of A Proposed Action

The Draft Guidance provides practitioners with a three-step framework for assessing an agency's analysis of the direct effects of a proposed action on the environment:

In the agency's analysis of direct effects, it would be appropriate to: (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change [FN51]

Each of these three steps is discussed in more detail below.

1. Quantifying Cumulative Emissions Over The Life Of The Project

Agencies should quantify both the direct and indirect emissions over the expected life of a proposed action.

[T]he direct and indirect GHG emissions from the action should be considered in scoping and, to the extent that scoping indicates that GHG emissions warrant consideration by the decision maker, quantified and disclosed in the environmental document. [FN52]

Direct emissions include those emissions "over which [the agency] has control or authority." [FN53] Examples include the emissions from large emitters such as power plants, [FN54] emissions during the construction and operation of a pipeline, [FN55] the energy used by federal facilities, [FN56] and the emissions from terrestrial carbon sequestration. [FN57] To quantify these emissions, the Draft Guidance suggests that agencies rely on existing GHG emission-reporting protocols. [FN58]

Indirect emissions include those GHG emissions that are reasonably foreseeable and caused by the proposed action. As noted *infra* in section 1.A, it is difficult to draw the line between indirect GHG emissions and unrelated GHG emissions. Practitioners should therefore hold agencies to the familiar tort notion of proximate cause. In other words, practitioners should make sure that the agency also quantifies indirect emissions "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" [FN59] in the NEPA analysis of direct effects. An agency's failure to include such indirect GHG emissions could provide a basis to challenge the NEPA analysis. This is particularly so given that the Draft Guidance itself states that the agency should include both direct and indirect emissions in the NEPA analysis of direct effects.

2. Discussing Measures To Reduce GHG Emissions

The NEPA analysis must also include a discussion of alternatives to the proposed action. If an EIS is required, the alternatives analysis serves as "the heart of the environmental impact statement." [FN60] It must "vigorously explore and objectively evaluate" all reasonable alternatives. [FN61] Accordingly, the Draft Guidance emphasizes the importance of considering mitigation measures in the alternatives analysis.

For proposed actions evaluated in an EIS, ... agencies should evaluate GHG emissions associated with energy use and mitigation opportunities and use this as a point of comparison between reasonable alternatives. [FN62]

As mentioned above, the Draft Guidance emphasizes the need to ensure the quality of any mitigation measures "including . . . permanence, verifiability, enforceability, and additionality." [FN63]

It is difficult, however, to prevail on a NEPA challenge based on deficient alternatives analysis. First, courts have allowed agencies to dismiss some potential mitigation measures without analysis. For example, in *Sierra Club v. Clinton*, the plaintiffs challenged the State Department's failure to "rigorously explore alternatives such as energy efficiency, renewable energy, clean technology, and demand-side management." [FN64] The problem, according to the plaintiffs, was that the State Department dismissed energy conservation measures with the simple reasoning that they "cannot negate the need for the Project." Despite this conclusory explanation, the court upheld the State Department's rejection of mitigation measures on the basis that an EIS "must only briefly discuss the reasons why an alternative was eliminated from a more detailed evaluation." [FN65]

Second, the agency need not select an alternative based on the quantity of GHG emissions. Some proposed actions might present choices based on quantifiable differences in GHG emissions. For an action evaluated in an EIS, GHG emissions should serve "as a point of comparison" between reasonable alternatives. For actions evaluated in an EA, GHG emissions need only serve "as a factor in discussing alternative uses of available resources." Ultimately though, for actions evaluated in an EIS or EA, GHG emissions need not be the deciding factor. [FN66]

3. Qualitatively Discussing the Link Between GHG Emissions And Environmental Impacts

Under NEPA, an agency has an obligation to take a "hard look" at "any adverse environmental effects" of a proposed action. [FN67] The Draft Guidance interprets this to mean that agencies should take a practical approach when analyzing the effects of a proposed action's GHG emissions on climate change. "[I]t is not currently useful for the NEPA analysis to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." [FN68] Accordingly, the Draft Guidance does not require agencies to draw a direct causal link between GHG emissions and the environmental effects of climate change. [FN69] Instead, it suggests that the "estimated level of GHG emissions can serve as a reasonable proxy for assessing potential climate change impacts."

Nonetheless, agencies should make qualitative assessments when it is feasible to do so, if for no other reason than, as discussed below, some courts may take a more demanding view of NEPA than the CEQ guidelines suggest. For example, the agency could compare the project's GHG emission numbers with other emission sources (e.g. individual, regional, national, global). [FN70] Similarly, the agency might qualitatively discuss the conceivable effects of marginal increases in emissions by, for example, including a summary of local, regional, or national climate change scientific assessments. [FN71] This level of analysis should be viewed as the minimum to satisfy NEPA's "hard look" requirement.

ii. Analyzing Cumulative Effects on Climate Change

In addition to analyzing the proposed action's GHG emissions, an agency may have an obligation to analyze the cumulative effects of those GHG emissions. [FN72] The Draft Guidance takes the position that agencies have some discretion to include or omit an analysis of cumulative effects in the challenging context of climate change. In contrast, the Ninth Circuit in *Center for Biological Diversity* emphasized that "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." [FN73] As discussed below, agencies and practitioners should be aware of this divergence of views.

The Draft Guidance instructs agencies to undertake a two-step process when analyzing cumulative effects. First, the agency should begin "with consideration of the direct and indirect effects on the environment that are expected or likely to result from a proposal for agency action or its reasonable alternatives." [FN74] Then, the agency should determine which cumulative effects are relevant because of their impact on the environment. Relevant effects include those that increase in combination with "past, present, and foreseeable future effects on the environment" and should be discussed in the EA or EIS. [FN75] Ultimately then, the agency need not consider the cumulative effects of GHG emissions if they are deemed irrelevant.

The Draft Guidance also takes the position that agencies do not have to link GHG emissions to specific environmental impacts. Pursuant to NEPA case law, an agency can limit the scope of cumulative effects based on practical considerations. [FN76] Accordingly, as mentioned above, the Draft Guidance takes the position that "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." [FN77] Similarly, the Forest Service has stated:

Because GHG emissions mix readily into the global pool of GHGs, it may not be currently possible to ascertain the effects of emissions from single or multiple sources (projects). Also, because the large majority of Forest Service projects are extremely small in the global atmospheric CO2 context, it is not presently possible to conduct quantitative analysis of actual climate change effects based on individual or multiple projects [FN78]

The Forest Service has therefore decided to omit an analysis of the actual environmental effects of a proposed action's GHG emissions. Other agencies may adopt this approach to avoid the cost and expense of analyzing actual environmental effects.

The Draft Guidance's approach is in tension with the Ninth Circuit's decision in *Center for Biological Diversity*. In that case, the court remanded an EA on the basis that the agency had provided an insufficient analysis of the cumulative effects of the proposed action on climate change.

While the EA quantifies the expected amount of CO2 emitted from light trucks MYs 2005-2011, it does not evaluate the 'incremental impact' that these emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions such as other light truck and passenger automobile CAFE standards. [FN79]

The problem, according to the court, was that the EA did not "discuss the *actual* environmental effects resulting from those emissions or place those emissions in the context of other CAFE rulemakings." [FN80] The court therefore remanded the EA to the agency to "provide the necessary contextual information about the cumulative and incremental environmental impacts" of the proposed action. [FN81]

Practitioners and agencies should be aware of this divergence of views. In the Ninth Circuit, an agency's NEPA document might be deficient if it fails to include a cumulative effects analysis that discusses the actual environmental effects of a proposed action's GHG emissions. It will likely remain difficult, however, to challenge a cumulative effects analysis due to NEPA's "rule of reason." The challenging party may have to demonstrate that agencies have, or could obtain, data from scientific models that are capable of analyzing the actual affects of a proposed action's GHG emissions.

iii. Determining When The Effects of GHG Emissions Are Significant

As noted, NEPA requires agencies to prepare a full EIS for "major Federal actions significantly affecting the quality of the human environment." [FN82] The crucial question then is whether the GHG emissions from a proposed action significantly effect the environment within the meaning of NEPA. The CEQ does not tackle this question in the Draft Guidance, though it does invite feedback on whether it should do so in the final version. [FN83] In the mean time, NEPA case law and CEQ regulations provide agencies with some direction for evaluating the environmental significance of GHG emissions.

If a proposed action significantly affects the environment, [FN84] then the agency has an obligation to prepare a full EIS that closely analyzes the environmental effects of that action. [FN85] The Draft Guidance states that the "[e]valuation of significance under NEPA is done by the action agency based on the categorization of actions in agency NEPA procedures and action-specific analysis of the context and intensity of the environmental impacts." [FN86] 40 C.F.R. § 1508.25 sets forth the ten intensity factors that an agency should consider in assessing significance.

Whether a potential impact is significant or not, and should be included in an EIS, depends upon the "setting of the proposed action." [FN87] Thus, for example, in the case of a project-level action, significant impacts to be considered are those with local effects, rather than those that affect "the world as a whole." [FN88] On one hand, this would appear to rule out significant climate change impacts that occur on a global scale. [FN89] Indeed, the Draft Guidance states, "[m]any agency NEPA analyses to date have found that GHG emissions from an individual agency action have small potential effects." [FN90]

At the same time, because the global GHG concentration is generally considered already to have breached a level of cumulative significance, one reading of NEPA would require most federal projects with any GHG emissions to prepare an EIS analyzing the impacts of the proposed action on climate change. [FN91] These divergent ways of viewing the global commons aspect of climate change are precisely why it is difficult to frame useful advice in the context of assessing "significance." Is every additional part-per-million significant, or, because climate change is a global commons problem with world-wide effects, are additional emissions, even if huge, insignificant? Given this confounding difficulty, it seems likely that courts and agencies will continue to use size as a proxy for significance, notwithstanding that doing so simply avoids the conceptual problem at the heart of a cumulative impacts or significance analysis.

For example, certain big projects, such as nationwide programmatic rulemakings, [FN92] have been found to significantly affect the environment. To evaluate the significance of such nationwide actions, agencies should rely primarily on the CEQ's existing guidelines for evaluating the "context and intensity" of a proposed action. [FN93] Specifically, ten "severity" factors are used to assess the "intensity" of an action. [FN94] While the presence of one factor does not militate for a finding of significance, [FN95] the presence of several of these factors may compel a finding of significance. [FN96] Of the ten factors in the CEQ definition, five may be questioned or raised as reasons for requiring an EIS. [FN97] Therefore, before determining that the GHG emissions from an action are insignificant, an agency should assess the "context and severity" of the action. An agency may find that this assessment quickly leads to a finding of significance, thereby triggering the requirement to prepare an EIS. [FN98]

Center for Biological Diversity provides a particularly instructive example where an EIS might be required due to the significant environmental impacts of GHG emissions. In that case, NHTSA prepared an EA that merely quantified the increased GHG emissions caused by a nationwide rulemaking for CAFE standards. The agency, however, failed to include an analysis of the cumulative effects associated with increased GHG emissions, let alone a discussion of actual environmental impacts. The court remanded the matter to the agency with the following critique:

Without some analysis [of the environmental impacts of GHG emissions, it would be impossible for NHTSA to know ... whether a change in GHG emissions of 0.2% or 1% or 5% or 10% ... will be a significant step toward averting the 'tipping point' and irreversible adverse climate change. [FN99]

The court then discussed the petitioner's argument that NHTSA's nationwide rulemaking might have a significant environmental impact. Notably, the court cited studies by the Intergovernmental Panel on Climate Change regarding potential catastrophic changes to the environment due to climate change. [FN100] The court then criticized the EA for failing to "provide a 'statement of reasons' for a finding of no significant impact, much less a 'convincing statement of reasons.'" [FN101] This appears to suggest that, on remand, NHTSA will have to make a determination that the GHG emissions caused by the rulemaking have a significant impact on the environment, thereby requiring a full-blown EIS.

Ultimately though, an agency may be able to convince a court that GHG emissions are insignificant due to the lack of national standards or climate change legislation. For example, in *Audubon Naturalist Society of the Central Atlantic States, Inc. v. U.S. Dep't of Transp.*, the Court upheld NHTSA's decision not to analyze climate change because there was "no national regulatory thresholds for greenhouse gas emissions or concentrations ...". [FN102] The court came to a similar conclusion in *North Carolina Alliance*. There, the agency acknowledged in the EIS its decision not to evaluate GHG emissions on the basis of a "lack of either national standards or EPA criteria or thresholds." [FN103] These two cases provide support for the position that the lack of national climate change legislation complicates a NEPA finding of significant impacts. [FN104]

II. Consideration of the Effects of Climate Change on a Proposed Action

The second section of the Draft Guidance discusses whether NEPA analysis should evaluate the impacts of climate change on the proposed action. This turns on two separate inquiries: (a) when should an agency consider the impacts of climate change in NEPA documents, and (b) how should the agency evaluate climate change impacts. In answering these two inquiries, this Part will include discussion of NEPA analysis for land management decisions. [FN105]

A. When the agency should consider climate change impacts

The Draft Guidance directs agencies to utilize the scoping process to determine whether the impacts of climate change on a proposed action warrant consideration. It is therefore essential that agencies refrain from prematurely dismissing climate change issues as 'outside the scope' of the analysis. [FN106] Rather, the agency should make a case-by-case determination:

When scoping the impact of climate change on the proposal for agency action, the sensitivity, location and timeframe of the proposed action will determine the degree to which consideration of these predictions or projections is warranted. [FN107]

Thus, for example, "if a proposed project requires the use of significant quantities of water, changes in water availability associated with climate change may need to be discussed [in an EA or EIS]." [FN108] The Draft Guidance also clarifies that agencies should focus on the impacts of climate change on vulnerable populations. For example, the impacts of climate change on "[t]ribal and Alaska Native communities that maintain their close relationship with the cycles of nature" [FN109] warrant special consideration.

Often, the duration of the proposed action will determine whether an analysis of climate change impacts is necessary. While climate change is already having an impact in certain areas, many effects are projected to occur in the future. Thus, the Draft Guidance states that agencies should only consider climate change effects that occur "within the project's timeframe." [FN110] For example, considering rising sea levels would be appropriate for a long-term proposed action. [FN111] In contrast, many short-term projects will likely be unaffected by climate change.

Climate change impacts are particularly relevant for long-term land management decisions. [FN112] Last year, the Department of the Interior (DOI) emphasized the priority of protecting the country's resources from the effects of climate change. [FN113] Similarly, the Forest Service has recognized the need to respond to the challenge presented by climate change - "one of the most urgent tasks facing the Forest Service." [FN114] Both of these agencies are therefore taking steps to consider the impacts of climate change in the NEPA documents for land management plans and decisions. [FN115] Moreover, federal courts appear to be increasingly approving of, if not yet insisting on, consideration of climate change issues in NEPA analysis for federal land management plans. [FN116]

There are, however, arguments against considering climate change in NEPA documents for land management decisions. At the land use planning stage, broad assessments are made on the suitability of lands for various types of activities. Although the lands may be made available for that type of activity, decisions are not actually being made on whether those activities will proceed. It may therefore be speculation to assess the impacts of climate change at the land management stage. Indeed, for the time being, the CEQ has excluded land management decisions from the scope of the Draft Guidance. [FN117] Nonetheless, given the statements issuing from the DOI and FS that climate change impacts should be considered, land management agencies should incorporate those considerations into planning and land use decisions.

B. How climate change impacts should be considered

The Draft Guidance notes that climate change can "affect the environment of a proposed action in a variety of ways." [FN118] For example, climate change will likely alter global weather patterns and, as the Draft Guidance notes, manifest in "greater risk of floods, storm surges, or higher temperatures." [FN119] (Such weather events could, of course, also have profound implications for federal public lands. Indeed, commentators have linked climate change to three categories of effects: physical, biological, and socioeconomic. [FN120])

The first step of the NEPA analysis then is to identify the reasonably foreseeable condition of the affected environment as a general matter, taking into account climate change effects:

When assessing the effects of climate change on the proposed action, an agency typically start [sic] with an identification of the reasonably foreseeable future condition of the affected environment for the 'no action' alternative based on available climate change measurements, statistics, observations, and other evidence. [FN121]

In identifying these future conditions, agencies will have to deal with the uncertainties associated with climate change science. [FN122] The Draft Guidance therefore establishes an evolving standard of best available science:

Where climate change effects are likely to be important but there is significant uncertainty about such effects, it may also be useful to consider the effects of any proposed action or its alternatives against a baseline of reasonably foreseeable future conditions that is drawn as distinctly as the science of climate change effects will support. [FN123]

As agencies develop new tools to evaluate the impacts of climate change on ecosystems and projects, they should be able to provide a more detailed assessment of foreseeable future conditions in the NEPA environmental analysis. [FN124]

The second step of the analysis uses future foreseeable conditions to evaluate the proposed action and its alternatives. [FN125] "Based on that description of climate change effects that warrant consideration, the agency may assess the extent that the effects of the proposal for agency action or its alternatives will add to, modify, or mitigate those effects." [FN126] The agency should therefore determine how climate change and the proposed action alter the environment.

For land management plans then, the agency might consider discussing adaptive planning techniques that mitigate climate change impacts. "In cases where adaptation to the effects of climate change is important, the significant aspects of these changes should be identified in the agency's final decision and adoption of a monitoring program should be considered." [FN127] This approach allows agencies to incorporate new best practices and manage public lands to mitigate the physical, biological, and socio-economic effects of climate change.

Ultimately, the agency's analysis of climate change impacts will be judged by NEPA's rule of reason. The analysis should therefore vary with the significance of climate change impacts for the proposed action. "For example, if a proposed project requires the use of significant quantities of water, changes in water availability associated with climate change may need to be discussed in greater detail than other consequences of climate change." [FN128] This may even require an analysis in a separate section of the EA or EIS - a fairly significant addition to the NEPA analysis.

Conclusion

The Draft Guidance encourages agencies to "identify alternate actions that are both adapted to anticipated climate change impacts and mitigate the GHG emissions that cause climate change." [FN129] This should improve the consideration of climate change in NEPA documents. Yet the Draft Guidance fails to resolve some of the complexities at the intersection of climate change and NEPA and, in some cases, may inject doubt into the NEPA process. In anticipation of this critique, the CEQ states that its guidance "will evolve to reflect the scientific information available and the legal and policy context of decisions that the NEPA process is intended to inform." We therefore conclude by identifying three areas where the Draft Guidance could evolve and clarify the NEPA process.

First, the CEQ should reconsider the proposed indicator of 25,000 tpy. The CEQ may have proposed this quantity to simplify the initial determination of whether to analyze GHG emissions. Yet this indicator is susceptible to challenge, as is any quantitative threshold. Accordingly, the CEQ could shift gears and provide agencies with a multi-factor approach for determining whether an analysis of GHG emissions would improve the decision-making approach. A factor-based approach could be structured after the CEQA Guidelines. [FN130]

Second, the CEQ should provide more guidance concerning when GHG emissions trigger significant environmental effects, as well as with respect to the related issue of how to assess the cumulative impacts of GHG emissions. The fact that these are very difficult questions in the context of climate change provides all the more reason for this elite group of experts to issue some direction to agencies and the public.

Finally, the guidance should be extended to apply to land and resource management actions. In the Draft Guidance, the CEQ requested comments as to whether it would be appropriate to require an analysis of GHG emissions in the NEPA

documents for these actions. To be sure, this is a contentious issue. Ultimately though, NEPA applies to all federal actions, including land management decisions.

These three suggestions highlight some of the main issues that could arise in future debates over NEPA and climate change. Accordingly, in evaluating the CEQ's final guidance, practitioners should determine whether the CEQ has resolved these outstanding issues and if so, whether their rationale is firmly grounded in NEPA regulations, case law, and climate change science.

The views expressed in this paper are solely those of the author (or authors).

Please cite as: Krakoff, Sarah, and Gillespie, Stuart C, "When and How to Analyze Climate Change Under NEPA," *Development Issues in the Major Shale Plays,* Paper No. 3, Page No. ___ (Rocky Mt. Min. L. Fdn. 2010).

Climate Change and NEPA Analysis

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Climate Change and NEPA

• Climate Change basics: The atmosphere as a global commons.

• Spatial dispersion

• Temporal dispersion

• Uncertainties about dangerous interference

• 350 ppm?

• 450 ppm?

• Current levels: 385-395 ppm

• **NEPA's Purpose:** "To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C. 4321.

• NEPA's Method: The EIS/EA Requirement

Fitting Climate Change into NEPA

Two issues:

Mitigation: When do proposals for major federal action need to be analyzed for their contributions to GHG concentrations? (Emissions effects)

Adaptation: When do proposals for major federal action need to be analyzed in the context of the effects of climate change on the environment? (Effects effects?)

NEPA and Emissions Effects (When)

• When should the agency quantify and disclose GHG emissions?

• 25,000 tpy "indicator" as a "useful presumptive threshold"

• Automatically "significant"? No.

• Automatically "insignificant" if below 25,000 tpy? No.

• Why 25,000 tpy?

• CAA Mandatory Reporting Requirement Threshold

• *But see* CEQA Guidelines cautioning against borrowing thresholds from other laws

• "Meaningful" emissions

• Direct and indirect emissions

• Emissions that are caused by the project and are reasonably foreseeable

• Scoping process can be used to bound analysis

NEPA and Emissions Effects (How?)

• How should the agency analyze emissions in NEPA documents?

• Quantify emissions over the life of the project

• Discuss measures to reduce emissions, including reasonable alternatives

• Discuss link between emissions and environmental impacts(?)

• Quantify emissions over the life of the project

• Technical documents and tools

• Mandatory GHG Reporting Rule for large emitters, 74 Fed. Reg. 56259-56308

• Scope 1 Emissions at Federal facilities, EO 13514

• Emissions and removals from terrestrial carbon, DOE Technical Guidelines at www.eia.doe.gov/oiaf/1605/

• Land Management protocols (not in CEQ guidance):

• IPCC Good Practice Guidance

• GHG Protocol Initiative

• Discuss measures to reduce emissions, including reasonable alternatives

• For actions evaluated in an EIS:

• Evaluate emissions associated with energy use and mitigation opportunities and use this as point of comparison between reasonable alternatives

TABLE

Carefully evaluate quality of mitigation measure

(Reasonable Alternatives)

TABLE

Including permanence, verifiability, enforceability, additionality

(Reasonable alternatives)

Link between emissions and environmental effects?

*The problem of cumulative effects and climate change (and resistance to articulating a threshold for "significant effects")

*CEQ cautions against linking emissions to particular environmental effects, and suggests using quantitative emissions as a proxy

TABLE

NEPA and Effects from Climate Change

• When should agencies consider effects from climate change (e.g., sea level rise, increasing aridity, increases in extreme weather events) in their analysis of environmental effects under NEPA?

• Scoping process should determine whether climate impacts warrant emphasis

• Sensitivity, location, time frame of the project proposal

• Climate effects are appropriately considered as part of the proposed action's "affected environment."

• How

• Start with reasonably foreseeable future condition of the affected environment for the "no action" alternative (the baseline)

• Best available climate science as basis for projection

• Consider specific effects of proposed action

• Include proposed action's effects on vulnerability of ecosystems

For example. . . proposed ski area expansion near pika habitat?

TABLE

NEPA and Effects from Climate Change

TABLE

• Include proposed action's effects on vulnerable communities

• Effects on Alaska Native hunting, fishing gathering

• Effects on American Indian hunting, fishing, gathering, and sacred sites?

Why Bother?

TABLE

[FNa1]. Professor, University of Colorado Law School.

[FNaa1]. Law Clerk, Supreme Court of Colorado, 2010-2011; J.D., University of Colorado Law School, B.A. Harvard University. The views and analysis herein are my own and do not reflect those of the Court.

[FN1]. CEQ, "Draft NEPA Guidance On Consideration of The Effects Of Climate Change And Greenhouse Gas Emissions," (Feb. 18, 2010) (available at http:// ceq.hss.doe.gov/nepa/regs/ Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_ FINAL_02182010.pdf) (hereinafter "Draft Guidance").

[FN2]. *See* 40 C.F.R. §§ 1502.16, 1508.8(b) (requiring air quality assessment). The absence of specific mention of GHG omissions is not surprising, given NEPA's vintage.

[FN3]. For example, in *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1217 (9th Cir. 2008), the Ninth Circuit found that a proposed emissions rule for light trucks was "collectively significant" within the meaning of 40 C.F.R. § 1508.7, thereby requiring an analysis of GHG emissions. In contrast, the court in *North Carolina Alliance for Transportation Reform Inc. v. U.S. Dept. of Transport*, 2010 WL 1992816 (M.D. N.C. May 19, 2010), refused to adopt a zero-threshold standard for climate change analysis in a NEPA document. Instead, the court upheld the Department of Transportation ("DOT") decision to omit an analysis of GHG emissions because it found that such an analysis would not be useful.

[FN4]. Draft Guidance, 3.

[FN5]. Courts have often employed the 'rule of reason' to assess an agency's NEPA analysis. "[I]nherent in NEPA and its implementing regulations is a 'rule of reason,' which ensures that agencies determine whether and to what extent to prepare an EIS based on the usefulness of any potential new information to the decisionmaking process." *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767 (2004); *See also Coalition on Sensible Transp., Inc. v. Dole*, 826 F.2d 60, 66 (D.C. Cir. 1987) ("[T]he NEPA process involves an almost endless series of judgment calls.... The line-drawing decisions necessitated by this fact of life are vested in the agencies, not the courts."). One court has already invoked the rule of reason to uphold an agency's decision to omit an analysis of GHG emissions in an EA. *See North Carolina Alliance for Transportation Reform, Inc.*, 2010 WL 1992816, *20 (finding that the omission of a further analysis of GHG emissions did not violate NEPA).

[FN6]. Kathleen A. Miller, *Climate Change and Water in the West: Complexities, Uncertainties, and Strategies for Adaptation*, 27 J. LAND, RESOURCES & ENVTL. L. 87, 88-89 (2007).

[FN7]. Draft Guidance, 7.

[FN8]. In December of 2009, the California Natural Resources Agency finalized guidelines for incorporating climate change into CEQA documents. *See* Title 14, Cal. Code of Regulations, §§ 15000 et seq. The CEQA has been described as California's mini-NEPA and contains many of the same procedural requirements.

[FN9]. Draft Guidance, 2.

[FN10]. *Id.* at 1-2.

[FN11]. *Id.* at 2, 3-4.

[FN12]. *Id*. at 1.

[FN13]. *Id*. at 2.

[FN14]. To the contrary, the Draft Guidance asks for comments on the following question:
Should CEQ provide guidance to agencies on determining whether GHG emissions are "significant" for NEPA purposes. At what level should GHG emissions be considered to have significant cumulative effects. In this context, commenters may wish to consider the Supreme Court decision in *Massachusetts v. EPA*, 549 U.S. 497, 524 (2007).
Id. at 12. As a quick NEPA refresher, CEQ's regulations provide ten intensity factors for evaluating the environmental impact of a proposed action. *See* Section 1.B.iii, *infra*, for a discussion of whether GHG emissions cause a significant impact within the meaning of the CEQ's context and intensity factors.

[FN15]. *Id*. at 2.

[FN16]. *Id*. at 3.

[FN17]. *See* Section 1.A.ii, *infra*, for a discussion of whether GHG emissions are "meaningful" and therefore appropriately analyzed in a NEPA document.

[FN18]. Draft Guidance, 3 n. 2.

[FN19]. In fact, the California Natural Resource Agency's (CNRA) has persuasively articulated its own reasons for rejecting an approach that relies on state reporting standards for GHG emissions. Like the EPA's reporting program for CO2, the California Air Resources Board (CARB) requires reporting from sources with emissions of more than 25,000 tons of CO2 per year, covers multiple source categories and contains relatively detailed requirements. Pointedly, the CNRA explained in its Final Statement of Reasons for the new CEQA Guidelines evaluating GHG emissions that "lead agencies must exercise caution in selecting a threshold to ensure that the threshold is appropriately applied... some agencies have adopted 'thresholds' pursuant to other laws that may not be applicable in the CEQA context." Final Statement of Reasons for SB 97 at p. 26. Specifically, the Final Statement of Reasons concluded that CARB's reporting threshold requirement of 25,000 tpy of CO2 was "unrelated to CEQA" because the reporting threshold "reflects a policy decision regarding regulation by [C]ARB, but does not address the level at which environmental harm may occur, and does not satisfy a leady agency's duties under CEQA related to review of projects which may result in significant adverse environmental impacts." *Id*. Such reasoning by the CNRA demonstrates why EPA's reporting thresholds for the MRR are similarly irrelevant to threshold levels of significance under NEPA analyses for emissions of CO2.

[FN20]. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 40 CFR Parts 51, 52, 70, and 71 [EPA-HQ-OAR-2009-0517; FRL- _____] (May 13, 2010) (hereinafter "Tailoring Rule").

[FN21]. In the wake of EPA's Tailoring Rule, agencies could take the position that the NEPA threshold amount for a GHG analysis should be higher, namely 75,000 tpy. The purpose of this discussion however is not to determine the appropriate numerical quantity of emissions. Rather, the point is to emphasize that an agency which relies on an arbitrary threshold (i.e. CEQ's 25,000 tpy indicator) to omit an analysis of GHG emissions will likely, in turn, to be deemed arbitrary and in violation of NEPA. Therefore, it an agency decided to omit a review of GHG emissions, it should provide more justification that a mere statement that "emissions were less than 25,000 tpy."

[FN22]. *See* Draft Guidance, 5.

[FN23]. *Id*. at 5. Tiering to a programmatic decision is a valid procedure under NEPA. *See* 40 C.F.R. §§ 1502.5, 1502.24.

[FN24]. Plaintiffs in NEPA cases usually ask for a preliminary injunction in district court to enjoin all or some of the activities of the government defendant until it has complied with the statute. *See, e.g., Montrose Parkway Alternative Coalition v. U.S. Army Corps of Eng'rs*, 405 F. Supp. 2d 587 (D. Md. 2005) (applying a four-factor test to determine whether a preliminary injunction was appropriate).

[FN25]. *See* Draft Guidance, 3.

[FN26]. *Id*. at 6.

[FN27]. *Id*.

[FN28]. *Id*. at 2.

[FN29]. *Id*. (emphasis added).

[FN30]. 689 F. Supp. 2d 1123, 1136 (D. Minn. 2010).

[FN31]. *Id*. at *7.

[FN32]. *Id*. at *12. Analyzing indirect emissions may emerge as a core tenet of NEPA compliance. An agency issuing federal oil and gas leases should, for example, consider the direct GHG emissions from the extraction of the minerals as well as downstream indirect GHG emissions from the processing and use of the minerals. Failure to consider such indirect emissions could lead to a successful NEPA challenge. *See Montana Environmental Information Center v. Bureau of Land Management*, Case No. 08-178-M-DWM(District of Montana, March 18, 2010). In that case, the BLM has entered into a settlement decision in Montana suspending various oil and gas leases while the agency prepares an EIS analyzing indirect GHG emissions.

[FN33]. The Draft Guidance suggests that the agency considering indirect emissions "should take account of all phases and elements of the proposed action over its expected life, subject to reasonable limits based on feasibility and practicality." Draft Guidance, 5. This suggests an analysis that considers upstream and downstream emissions with the same level of specificity as the EIS prepared in *Clinton*, 689 F.Supp. 26 at 1136.

[FN34]. 40 C.F.R. § 1508.8.

[FN35]. *Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 767 (2004).

[FN36]. Draft Guidance, 3.

[FN37]. CEQ's *Scoping Guidance* explains that the basic notion of scoping is to help the agency identify issues at an early point in the EIS process. *See* Scoping Guidance (CEQ 1981) (available at http:// www.nepa.gov/nepa/regs/scope/scoping.htm).

[FN38]. 2010 WL 1992816, * 20 (M.D. N.C. May 19, 2010) (holding that because none of the agencies directed the lead agency to evaluate potential impacts of GHG emissions, they were not arbitrary and capricious in omitting a GHG analysis from the NEPA environmental analysis). This decision was based, in part, on Supreme Court case-law holding that an agency takes a sufficient "hard look" when it obtains opinions from its own experts, obtains opinions from experts outside the agency, gives careful scientific scrutiny and responds to all legitimate concerns that are raised. *See Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 378-85 (1989).

[FN39]. *Id*.

[FN40]. *Id*.

[FN41]. Draft Guidance, 3.

[FN42]. The Ridge Landfill, located near Blenheim, Ontario, has a permitted capacity of 680,000 tones of waste per year. The Landfill reported 391,000 tons of GHG emissions. *See* Environment Canada, Summary of GHG Emissions by Facility (2008) (available at http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=DF08C7BA-1#section3).

[FN43]. The 670-MW Battle River Generating Station near Alberta, Canada reported 5,051,000 tpy of CO2 emissions. *Id*.

[FN44]. The West Elk Mine is located near the small town of Paonia, CO. In 2005, the mine vented 8.2 billion cubic feet of methane, the equivalent of approximately 3.7 million tpy of GHG emissions. *See* Letter from Kerrigan G. Clough, Deputy Reg'l Adm'r, U.S. Envtl. Prot. Agency, to Charles Richmond, Forest Supervisor, Grand Mesa, Uncompaghre, and Gunnison Nat'l Forests 2 (June 1, 2007), *available* at http:// climate.alston.com/files/docs/EPAR#egion0#80#1etter0#on0#MethaneR#eleases.pdf (regarding the "Draft Environmental Impact Statement, Deer Creek Shaft and E Seam Methane Drainage Well Project, Gunnison County, Colorado, CEQ #20070104").

[FN45]. 538 F.3d 1172 (9th Cir. 2008).

[FN46]. *Id*. at 1216.

[FN47]. *Id*. at 1217.

[FN48]. *Id*. (quoting 40 C.F.R. 1508.7).

[FN49]. 2010 WL 1992816, * 1.

[FN50]. *Id*. at *23. The parties disputed the exact mileage increase due to induced travel. *Id*. Regardless, the agencies made a nice argument neutralizing the effect of any increased mileage on GHG emissions. Specifically, the agency argued that "the increase in vehicle miles travelled will largely be absorbed by the new freeway components and shifting vehicles from other roadways." *Id*. This was so because there would be fewer "acceleration events" on the new highway. *Id*.

[FN51]. Draft Guidance, 3.

[FN52]. Draft Guidance, 5. Practitioners should note that California adopted more substantial guidelines for the analysis of GHG emissions under the CEQA. The CEQA Guidelines, included below, may provide practitioners and agencies alike with a useful model to supplement the Draft Guidance. Specifically, the CEQA Guidelines direct the approving agency to: "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or
(2) Rely on a qualitative analysis or performance based standards.
CEQA Guidelines § 15064.4(a).

[FN53]. Draft Guidance, 5.

[FN54]. *Id*. at 3. *See also* Mandatory Reporting of Greenhouse Gases, Final Rule, 74 *Fed. Reg*. 56260-56263 (providing a table with examples of affected sources).

[FN55]. *See Sierra Club v. Clinton*, 689 F. Supp. 2d 1123 (EIS quantified the energy used during the construction of the AC pipeline).

[FN56]. GHG emission accounting and reporting guidance for federal facilities will be issued under Executive Order 13514, §§ 5(a), 9(b). President Obama committed "to establish an integrated strategy towards sustainability in the Federal Government and to make reductions of greenhouse gas emissions a priority of Federal agencies." *Id.*, 74 *Fed. Reg.* 52,117 (2009).

[FN57]. *See* Technical Guidelines, Voluntary Reporting of Greenhouse Gas, (1605(b) Program, U.S. Department of Energy) (available at http:// www.eia.doe.gov/oiaf/1605). In particular, Part H Appendix explains how to estimate carbon fluxes from agricultural lands while Part I Appendix discusses forestry.

[FN58]. Draft Guidance, 4. For example, the Draft Guidance cites to the EPA's final rule on Mandatory Reporting of Greenhouse Gas, 74 Fed. Reg. 56259-56308. It should be noted however that the Draft Guidance excludes emissions from land management practices based on the rationale that "[l]and management techniques, including changes in land use or land management strategies, lack any established Federal protocol for assessing their effect on atmospheric carbon release and sequestration at a landscape scale." Draft Guidance, 4. This rationale however appears to miss the mark. There are already two "gold standard" accounting methodologies for GHG emissions from forestry practice: the Intergovernmental Panel on Climate Change *Good Practice Guidance for Land Use, Land Use Change and Forestry* (available at http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html) and the Greenhouse Gas Protocol Initiative *Land Use, Land-Use Change, and Forestry Guidance for GHG Project Accounting* (available at http://www.ghgprotocol.org/files/lulucf-final.pdf). Accordingly, the Final Guidance may adopt the position that agencies should account for emissions from land management practices.

[FN59]. *Cf.* 40 C.F.R. § 1508.8(b) (definition of "indirect effects"). Put another way, the analysis of GHG emissions should also include indirect GHG emissions that (1) bear a reasonably close causal relationship to the major federal action being reviewed, (2) are reasonably foreseeable and (3) are not speculative.

[FN60]. 40 C.F.R. § 1502.14.

[FN61]. *City of Bridgeton v. FAA*, 222 F.3d 448, 455 (8th Cir. 2000) (citing 40 C.F.R. § 1502.13).

[FN62]. Draft Guidance, 5.

[FN63]. *Id.* at 6.

[FN64]. 689 F.Supp.2d 1123, 1142.

[FN65]. *Id.* (citations omitted).

[FN66]. At this point, it is unclear whether existing models have the ability to make statistically valid comparisons of GHG emissions between alternatives at the project level. *See e.g.* Forest Service, Climate Change Consideration in Project Level NEPA Analysis (Jan 13, 2009) (available at http://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf) (hereinafter FS NEPA Guidance") (explaining that "[c]urrently the Agency does not have an accepted tool for analyzing all GHG emissions" because tools such as *FOFEM 5.5* and *Consume 3.0* can only roughly estimate the emissions from land-management decisions at the project level). Of course, some alternatives will present sufficiently stark comparisons as to make such fine-grained discussions unnecessary. For example, a no-action alternative for a proposal to construct a coal-fired power plant.

[FN67]. 42 U.S.C. § 4332(2)(C).

[FN68]. Draft Guidance, 3. This advice rests on two distinct characteristics of climate change. First, the effects of a project on climate change are prospective and may not even manifest during the lifetime of the project. *See Deukmejian v. Nuclear Regulatory Comm'n*, 751 F.2d 1287, 1300 & n.63 (D.C. Cir. 1984), *vacated on other grounds*, 760 F.2d 1320 (D.C. Cir. 1985) (EIS need not address "remote and highly speculative consequences."); *see Moore FORCE, Inc. v. U.S. Dep't of Transp.*, 243 F. Supp. 2d 425, 439 (M.D. N.C. 2003) (stating that an EIS need not "consider potential effects that are highly speculative or indefinite"). Second, the effects on climate change occur at the global level, and thus cannot be localized like other environmental effects.

[FN69]. This is appropriate where the agency lacks the scientific tools and models to assess the impacts of GHG emissions on the environment. The CEQ has devised a specific procedure for "evaluating reasonably foreseeable significant adverse effects on the human environment" when "there is incomplete or unavailable information." *See* 40 C.F.R. 1502.22(a), (b)(1)-(4).

[FN70]. *See* FS NEPA Guidance, *supra* note 66, at 6.

[FN71]. *Id.*

[FN72]. An agency has an obligation to consider the "overall, cumulative impact of the action proposed" for "major Federal actions significantly affecting the environment" that are analyzed in an EIS. 35 *Fed. Reg.* 7390, 7391 (1970); *See also* 40 C.F.R. 1508.7 (defining "cumulative impact"). Similarly, the courts have held that an EA "must in some circumstances include an analysis of the cumulative impacts of a project.... An EA may be deficient if it fails to include a cumulative impact analysis...." *Native Ecosystems Council v. Dombeck,* 304 F.3d 886, 895 (9th Cir. 2002); *see also Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 993-94 (9th Cir. 2004); *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1076-78 (9th Cir. 2002). Indeed, it would appear that the standard for an EA is effectively that of a mini EIS. *See Found. for N. Am. Wild Sheep*, 681 F.2d at 1178 n. 29 (1982) (Even though an EA need not "conform to all the requirements of an EIS," it must be "sufficient to establish the reasonableness of th[e] decision" not to prepare an EIS); *see also* 40 C.F.R. § 1508.9(a)(1).

[FN73]. *Center for Biological Diversity*, 538 F.3d at 1217.

[FN74]. *Id.* at 10.

[FN75]. *Id.*

[FN76]. *See Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976).

[FN77]. Draft Guidance, 3.

[FN78]. FS NEPA Guidance, *supra* note 66, at 5.

[FN79]. 538 F.3d at 1216.

[FN80]. *Id.*

[FN81]. *Id.*

[FN82]. 42 U.S.C. 4332(2)(C).

[FN83]. The Draft Guidance poses precisely this question for public review, namely "Should CEQ provide guidance to agencies to determine whether GHG emissions are significant for NEPA purposes." Draft Guidance, 12.

[FN84]. NEPA provides that an EIS must be prepared by federal agencies on "proposals for ... major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C), 40 C.F.R. §§ 1502.1, 1502.16. An EA is often the NEPA document for making this determination. It is a "concise public document" that "[b]riefly provide[s] sufficient evidence and analysis for determining whether to prepare an [EIS] or a finding of no significant impact." 40 C.F.R. § 1508.9(a). If an agency issues a finding of no significant impact ("FONSI"), "it must supply a 'convincing statement of reasons' to explain why a project's impacts are insignificant." *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998). If, however, there is a substantial question as to whether a project "may have a significant effect" on the environment, then the agency must prepare an EIS. 40 C.F.R. §§ 1502.1, 1502.14, 1508.7.

[FN85]. The "effects" that must be considered in a NEPA analysis include direct, indirect, and cumulative effects. *See* 40 C.F.R. § 1508.25(c). Under Ninth Circuit case law, an agency has a duty to consider, in quantitative fashion, the direct, indirect, and cumulative effects of a proposed action on climate change. *See Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1216-17 (9th Cir. 2008) (finding NEPA analysis of proposed CAFE standards unlawful under NEPA: "While the EA quantifies the expected amount of CO2 emitted from light trucks [in years] 2005-2011, it does not evaluate the 'incremental impact' that these emissions will have on climate change or on the environment generally in light of other past, present, and reasonably foreseeable actions... the impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct").

[FN86]. *Id*.

[FN87]. 40 C.F.R. § 1508.27(a).

[FN88]. *Id*.

[FN89]. In fact, an open question for agencies is whether they need to consider the transboundary effects of GHG emissions. Executive Order 12114 limits the scope of an EIS to the sovereign territory of the United States. This EO was confirmed in *Natural Resources Defense Council v. Nuclear Regulatory Comm.*, 647 F. 2d 1345 (D.C. Cir. 1981), where the court upheld an EIS that did not address impacts outside the United States. Arguably then, although the effects of climate change may be significant on a global scale, the only impacts that NEPA requires an agency to consider are those within the United States.

[FN90]. Draft Guidance, 3.

[FN91]. *See* Charles H. Eccleston, *Assessing Cumulative Significance of Greenhouse Gas Emissions: Resolving the Paradox - The Sphinx Solution*, ENVIRONMENTAL PRACTICE 12:105-115 (2010)(discussing the paradox that federal actions with GHG emissions cannot quality for a Finding of No Significance and thus must prepare an EIS discussing the project's impact on climate change).

[FN92]. *See e.g., Center for Biological Diversity v. NHTSA*, 538 F.3d 1172.

[FN93]. 40 C.F.R. §§ 1508.25, 1508.27. Agencies might also look to California's guidelines for assessing the significance of a proposed action. Section 15064.4(b) of California CEQA Guidelines provides agencies with a list of factors to be considered in determining the significance of a project's GHG emissions. *See also* California Natural Resources Agency, Final Statement of Reasons for Regulatory Action, 24-27. The first factor, for example, asks lead agencies to consider whether the project will result in an increase or decrease in different types of GHG emissions relative to the existing environmental setting. Factor two asks whether a project exceeds a threshold of significance for GHG emissions adopted by the agency. Finally, factor three directs agencies to consider whether the project complies with a plan or regulation to reduce GHG emissions. The CEQ might consider adopting this factor-based approach to help agencies identify projects that significant affect the environment within the meaning of NEPA.

[FN94]. Courts often analyze these factors in determining whether an EIS is required. *See e.g. EPIC v. U.S. Forest Service*, 451 F.3d 1005, 1011 (9th Cir. 2006).

[FN95]. *See Township of Lower Alloways Creek v. Public Serv. Elec. & Gas Co.*, 687 F.2d 732 (3d Cir. 1982).

[FN96]. *See Curry v. United States Forest Serv.*, 988 F. Supp. 541 (W.D. Pa. 1997).

[FN97]. The five "intensity" factors at issue are: Factor 2 -- "The degree to which the proposed action affects public health or safety," Factor 4 -- "The degree to which the effects on quality of the human environment are likely to be highly controversial," Factor 5 -- "The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks," Factor 7 -- "Whether the action is related to other actions with individually insignificant but cumulatively significant impacts," and Factor 10 -- "Whether the action violates/threatens a violation of Federal, state, or local law or requirements imposed for the protection of the environment. *See* FS NEPA Guidance, *supra* note 66, at 7 (discussing how an agency should address these five intensity factors in a NEPA analysis of significant affects).

[FN98]. This is particularly true given the uncertainty surrounding the environmental effects of climate change. Intensity factor five focuses on the degree to which the effects on the environment "are highly uncertain or involve unique or unknown risks." The uncertainty of climate change (i.e. the possibility of catastrophic events) appears to favor the preparation of an EIS. That said however, in *Center for Biological Diversity v. Kempthorne*, 588 F.3d 701, 712 (9th Cir. 2009), the Court stated that the uncertainty associated with climate change "is not 'high uncertainty,' but only that quotient of uncertainty which is always present when making predictions about the natural world."
Yet, when it comes to climate change, one could argue that even very small increases in GHG emissions are cumulatively significant and should still be analyzed in an EIS. Although controversial, recent science suggests the target atmospheric level of CO2 should be 350 parts per million ("ppm") to achieve climate stabilization and avoid disastrous global consequences. *See* James Hansen, *et al., Target Atmospheric CO2: Where Should Humanity Aim*? The Open Atmospheric Science Journal, 2008, 2, 217-231. A more conservative target would be 400 ppm; *see also* Harold M. Draper, *Keeping Below the Tipping Point: A Literature Review of Climate Change with Attention to NEPA*, ENVIRONMENTAL PRACTICE 12:144-157 (2010) (providing a summary of climate change science as it relates to NEPA). Given that current atmospheric concentrations of CO2 are already 389 ppm (i.e. well above 350 ppm and rapidly approaching the more conservative estimate of 400 ppm), there is a valid argument that any additional GHG emissions "significantly impact" the environment and therefore require review in an EIS. *See e.g., City of Los Angeles v. NHTSA*, 912 F.2d 478, 501 (D.C. Cir. 1990) (Wald, C.J., dissenting) ("[W]e cannot afford to ignore even modest contributions to global arming. If global warming is the result of the cumulative contributions of myriad sources, any one modest in itself, is there not a danger of losing the forest by closing our eyes to the felling of the individual trees? Second, evidence in the record points out that international policymakers and scientists are calling for drastic reductions in carbon dioxide emissions to curb global warming. In the face of that evidence, how can we be sure without more explanation that increases of the magnitude of over 50 billion pounds of carbon dioxide over 20 years are really insignificant?").

[FN99]. *Center for Biological Diversity*, 538 F.3d at 1220-1221 (internal quotations omitted).

[FN100]. *Id.* at 1221-1222.

[FN101]. *Id.* at 1223.

[FN102]. 524 F. Supp. 2d 642, 708 (D. Md. 2007)

[FN103]. 2010 WL 1992816, *22. While this was a recent decision, practitioners should note that the EIS challenged in the decision was drafted in 1992 and finalized in 1996 (i.e. well before the endangerment finding in *Massachusetts v. EPA* and the

recent rulemakings with respect to the CAA). Moreover, the case was filed in 1999. Accordingly, its persuasiveness may be significantly less than one might expect for a decision issued in 2010.

[FN104]. Since these two cases were decided, the EPA has promulgated rules regarding GHG emissions. For example, the EPA recently issued its final MRR rule as well as the Tailoring Rule for the CAA. *See supra* notes 20-21 and accompanying text. Accordingly, one could argue that there are now standards for assessing the significance of GHG emissions. Thus, going forward, the better practice for an agency may be to prepare an EA discussing why a proposed action's GHG emissions are insignificant.

[FN105]. The CEQ does not provide any guidance for NEPA analysis for land management plans or decisions. *See* Draft Guidance, 2.

[FN106]. *See* FS NEPA Guidance, *supra* note 66, at 3.

[FN107]. Draft Guidance, 6.

[FN108]. *Id*. at 7. Or, for example, the Draft Guidance explains that "a proposal for long-term development of transportation infrastructure on a coastal barrier island will likely need to consider whether environmental effects or design parameters may be changed by the projected increase in the rate of sea level rise." *Id*.

[FN109]. *Id*. at 8.

[FN110]. *Id*. at 7.

[FN111]. *Id*. For example, it would be unnecessary to discuss projected rising sea levels for a short-term project. This is so because of the long length of time associated with sea level rise.

[FN112]. Climate change presents a particularly daunting challenge for federal land management agencies due to their obligation to prevent resource impairment resulting from climate change. *See e.g*., U.S. Climate Change Science Program & the Subcommittee on Global Change Research, Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources 9-5 (2008), available at http://www.climatescience.gov/Library/sap/sap4-4/final-report/sap4-4-final-report-Ch9-Synthesis.pdf (calling on federal land managers to "reduce the risk of adverse environmental outcomes through activities that increase the resilience of ecological systems to climate change.")

[FN113]. Ken Salazar, Secretary of Interior, announced that DOI is "taking the lead in protecting our country's ... lands and resources from the dramatic effects of climate change that are already occurring - from the Arctic to the Everglades." Sec. Or. 3289 (Sept. 14, 2009).

[FN114]. FS NEPA Guidance, *supra* note 66, at 1.

[FN115]. For example, the FS is currently preparing an EIS for the new forest planning rule. *See* Notice of Intent to Prepare an EIS, 74 Fed. Reg. 67,165. The notice included a set of principles that could be used to guide the development of a new planning rule -- the first two principles dealt with climate change.
Similarly, pursuant to Secretarial Order 3289, the DOI developed a "Plan for a Coordinated, Science-Based Response to Climate Change Impacts on our Land, Water, and Wildlife Resources" ("Coordinated Climate Response Plan"). In the Coordinated Climate Response Plan, DOI established the Climate Science Centers ("CSCs") and Landscape Conservation Cooperatives ("LCCs"). Perhaps most relevantly, the LCCs will "inform integrated resource management actions addressing climate change and other stressors within and across landscapes. They will link science and conservation delivery." *Id*. at 3. Any resource objectives, plans, and information developed by the CSCs and LCCs could be readily incorporated by the DOI into landscape-scale NEPA analyses.

[FN116]. *See Montana Environmental Information Center v. Bureau of Land Management* (Case No. 08-178-M-DWM, District of Montana, March 18, 2010) (reaching a settlement whereby BLM suspended a number of previously issued oil and gas leases while climate change issues are considered).

[FN117]. "CEQ does not propose to make this guidance applicable to Federal land and resource management actions, but seeks public comment on the appropriate means of assessing the GHG emissions and sequestration that are affected by Federal land and resource management decisions." Draft Guidance, 2.

[FN118]. *Id*. at 6.

[FN119]. Draft Guidance, 7. The biological effects of climate change are equally pressing and dramatic. In many cases, species will have to migrate to adapt to changes in ecosystems currently existing on public lands. For example, one study indicates that the projected climate in much of the U.S. southwest may be outside of the tolerances for 130 species of trees. Daniel W. McKenny, *et al., Potential Impacts of Climate Change on the Distribution of North American Trees*, 57 BIOSCIENCE 939 (2007). The consequence could be a mass northwards migration of these tree species.

[FN120]. This tripartite characterization of the effects of climate change has been used in the U.S. Gov't Accountability Office, Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources, GAO-07-863 (2007), available at http:// www.gao.gov/new.items/d07863.pdf. *See also* Robert L. Glicksman, *Ecosystem Resilience To Disruptions Linked To Global Climate Change: An Adaptive Approach To Federal Land Management*, 87 NEB. L. REV. 833, 839-852 (2009) (providing an in-depth discussion of these three categories of climate change impacts on federal public lands).

[FN121]. *Id*.

[FN122]. The Draft Guidance notes that "agencies should consider the uncertainties associated with long-term projections from global and regional climate change impacts." *Id*. at 8. On the one hand, the uncertainties associated with climate change science suggest that an agency may be unable to specifically establish reasonably foreseeable future conditions. This could frustrate, if not excuse, attempts to conduct the informed and realistic analysis required by NEPA.

[FN123]. *Id*.

[FN124]. To expedite this learning process, agencies should collaborate, and to the extent feasible, share computational models and assessment techniques.

[FN125]. 40 C.F.R. § 1502.15.

[FN126]. Draft Guidance, 6.

[FN127]. *Id*. at 7.

[FN128]. *Id*.

[FN129]. *Id*. at 11.

[FN130]. *See supra* note 51; *see also* CEQA Guidelines § 15064.4(a).

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