

2010

Climate Change and Environmental Review: Addressing the Impact of Greenhouse Gas Emissions under the Minnesota Environmental Policy Act

Thaddeus R. Lightfoot

Follow this and additional works at: <http://open.mitchellhamline.edu/wmlr>

Recommended Citation

Lightfoot, Thaddeus R. (2010) "Climate Change and Environmental Review: Addressing the Impact of Greenhouse Gas Emissions under the Minnesota Environmental Policy Act," *William Mitchell Law Review*: Vol. 36: Iss. 3, Article 5.
Available at: <http://open.mitchellhamline.edu/wmlr/vol36/iss3/5>

This Article is brought to you for free and open access by the Law Reviews and Journals at Mitchell Hamline Open Access. It has been accepted for inclusion in William Mitchell Law Review by an authorized administrator of Mitchell Hamline Open Access. For more information, please contact sean.felhofer@mitchellhamline.edu.

© Mitchell Hamline School of Law

**CLIMATE CHANGE AND ENVIRONMENTAL REVIEW:
ADDRESSING THE IMPACT OF GREENHOUSE GAS
EMISSIONS UNDER THE MINNESOTA
ENVIRONMENTAL POLICY ACT**

Thaddeus R. Lightfoot[†]

I. INTRODUCTION.....	1069
II. BACKGROUND: THE MINNESOTA ENVIRONMENTAL POLICY ACT AND THE GREENHOUSE GAS PROBLEM.....	1071
A. <i>A MEPA Synopsis</i>	1071
B. <i>An Overview of the Climate Change Problem</i>	1080
III. THE CURRENT STATUS OF CLIMATE CHANGE ASSESSMENT UNDER MEPA.....	1082
A. <i>MEPA Litigation: The Minnesota Steel Case</i>	1082
1. <i>The Minnesota Steel Final EIS</i>	1083
2. <i>The District Court Challenge to the Final EIS</i>	1086
3. <i>The Court of Appeals Opinion</i>	1091
B. <i>MPCA's Carbon Footprint Guidance</i>	1094
C. <i>Attempts to Amend MEPA</i>	1099
IV. THE FUTURE OF CLIMATE CHANGE ANALYSIS UNDER MEPA.....	1103
A. <i>Should the Statute Be Amended To Require a Greenhouse Gas Analysis?</i>	1103
B. <i>Strategies for Project Proposers and RGUs</i>	1105
V. CONCLUSION.....	1108

[†] Founding partner and managing officer, The Environmental Law Group, Ltd., Minneapolis, Minnesota, and Adjunct Professor, William Mitchell College of Law. B.A., *summa cum laude*, Gonzaga University, 1982; J.D., *magna cum laude*, Georgetown University Law Center, 1988. From 1991 through 1994, the author served as a trial attorney with the United States Department of Justice's Environment Division, Environmental Enforcement Section, Washington, D.C. Views expressed in this article are those of the author alone and are not necessarily shared by The Environmental Law Group, Ltd., or its clients.

I. INTRODUCTION

As the world confronts climate change, federal and state governments are grappling with whether and how to assess the impact of greenhouse gas emissions under the National Environmental Policy Act (NEPA) and state environmental policy acts. Accounting for a proposed project's effects on climate change and the possible effects of a changing climate on a project is one of the most vexing issues in environmental review. Numerous commentators have evaluated the application of NEPA,¹ which requires federal agencies to develop information assessing the environmental impacts of major federal actions with the potential to significantly affect the environment, to greenhouse gas emissions.² Moreover, at least one court has declared that "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis NEPA requires agencies to conduct."³

There has been relatively little focus on the application of NEPA's state-law counterparts to evaluate a project's potential impacts on climate change. When the question has been addressed, the typical analysis discusses only the state environmental review laws of California, Massachusetts, or Washington.⁴ No commentator has offered a comprehensive evaluation of the application of Minnesota's

1. 42 U.S.C. §§ 4321–4370c (2006).

2. See, e.g., Caleb W. Christopher, *Success by a Thousand Cuts: The Use of Environmental Impact Assessment in Addressing Climate Change*, 9 VT. J. ENVTL. L. 549, 552 (2008); Michael B. Gerrard, *Climate Change and the Environmental Impact Review Process*, NAT. RESOURCES & ENV'T, Winter 2008, at 20, 20–21; Bradley C. Karkkainen, *Whither NEPA?*, 12 N.Y.U. ENVTL. L.J. 333, 338–43 (2004); Madeline June Kass, *A NEPA Climate Paradox: Taking Greenhouse Gases Into Account in Threshold Significance Determinations*, 42 IND. L. REV. 47, 50 (2009); Dave Owen, *Climate Change and Environmental Assessment Law*, 33 COLUM. J. ENVTL. L. 57, 62–63 (2008).

3. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008).

4. See Madeline June Kass, *Little NEPAs Take on Climate Goliath*, NAT. RESOURCES & ENV'T, Fall 2008, at 40 (discussing the California Environmental Quality Act (CEQA), the Massachusetts Environmental Policy Act, and the Washington State Environmental Policy Act); Owen, *supra* note 2, at 62–63 (discussing CEQA); Kenneth S. Weiner, *NEPA and State NEPAs: Learning from the Past, Foresight for the Future*, 39 ENVTL. L. REP. NEWS & ANALYSIS 10675 (2009) (discussing Washington State Environmental Policy Act); Katherine M. Baldwin, Note, *NEPA & CEQA: Effective Legal Frameworks for Compelling Consideration of Adaptation to Climate Change*, 82 S. CAL. L. REV. 769 (2009) (discussing NEPA and CEQA); Conor O'Brien, Note, *I Wish They All Could Be California Environmental Quality Acts: Rethinking NEPA in Light of Climate Change*, 36 B.C. ENVTL. AFF. L. REV. 239, 257–65 (2009) (discussing CEQA).

“little NEPA” —the Minnesota Environmental Policy Act (MEPA)⁵— to the issue of greenhouse gas emissions and climate change.

This article examines the intersection of climate change and MEPA environmental review. Part II offers a synopsis of MEPA and a general overview of the climate change problem. Part III discusses the current status of assessing climate change under MEPA, with particular focus on the first decision addressing the question of what constitutes adequate analysis of greenhouse gas emissions under the statute. In that recent opinion, the Minnesota Court of Appeals held a MEPA environmental impact statement (EIS) for the proposed reactivation of a taconite mine adequately addressed the impact of greenhouse gas emissions, climate change, and power generation.⁶ Part III also discusses efforts by the Minnesota Pollution Control Agency (MPCA) to develop guidance regarding the study of climate change issues in environmental review documents, and an attempt by the Minnesota Center for Environmental Advocacy (MCEA) to add MEPA statutory language mandating an analysis of greenhouse gas emissions.

In Part IV, the article concludes with a discussion of the future of climate change analysis under MEPA. Because the emission of greenhouse gases constitutes an environmental impact that state and local governments in Minnesota must evaluate to satisfy MEPA as currently drafted, amending the statute to address the effects of climate change is unnecessary. However, state agencies and local governments preparing MEPA environmental review documents should take particular care to ensure they evaluate the impact of a proposed project’s direct and indirect greenhouse gas emissions. Given the uncertain nature of predicting a proposed project’s effects on global climate change, as well as the difficulty in determining the possible effects of a changing climate on a project, state agencies and local governments may conclude in the course of conducting environmental review that important information regarding greenhouse gas impacts is incomplete or unavailable. If so, to comply with MEPA those agencies and local governments must clearly explain why the information is incomplete or unavailable, and they must summar-

5. MINN. STAT. §§ 116D.01–.06 (2008). A recent commentary mentions that the Minnesota Center for Environmental Advocacy has sought to amend MEPA to require a greenhouse gas analysis. Kevin Reuther, *MEPA at 36: Perspectives on Minnesota’s Little NEPA*, 39 ENVTL. L. REP. NEWS & ANALYSIS 10663, 10665 (2009).

6. *Minn. Ctr. for Envtl. Advocacy v. Minn. Dep’t of Natural Res.*, No. A08-2171, 2009 WL 2998037 (Minn. Ct. App. Sept. 22, 2009).

ize existing credible climate change information.

II. BACKGROUND: THE MINNESOTA ENVIRONMENTAL POLICY ACT AND THE GREENHOUSE GAS PROBLEM

A. A MEPA Synopsis

In late 1969, Congress enacted NEPA,⁷ an environmental Magna Carta that requires federal agencies to prepare an environmental impact statement on all major federal actions significantly affecting the environment.⁸ NEPA imposes information gathering procedures rather than substantive mandates and is designed to ensure that federal agencies consider environmental effects in planning and approving projects.⁹ The statute applies not just to the actions of federal agencies, but also to state, local, and private projects that receive federal financial assistance or require federal approvals, such as environmental permits.¹⁰

Fifteen states, the District of Columbia, and Puerto Rico have enacted state environmental policy acts, or “little NEPAs.”¹¹ Many of these state statutes are identical or very similar to NEPA. Because the state statutes are often as “skeletal” as NEPA, most states have enacted

7. 42 U.S.C. §§ 4321–4370c (2006).

8. DANIEL R. MANDELKER, ROBERT L. GLICKSMAN & ARIANNE MICHALEK AUGHEY, NEPA LAW AND LITIGATION (West) § 1:1 (2009). The regulations of the Council on Environmental Quality (CEQ) (codified at 40 C.F.R. § 1500 (2009)) implement NEPA.

9. 40 C.F.R. § 1500.1 (2009). *See also* MANDELKER ET AL., *supra* note 8, § 1:2 (discussing NEPA’s purpose).

10. *See* 40 C.F.R. § 1508.18 (2009) (defining “major federal action” as activities, projects, and programs “entirely or partially financed, assisted, conducted, regulated, or approved by federal agencies”).

11. *See* CAL. PUB. RES. CODE §§ 21000–21177 (West 2007 & Supp. 2010); CONN. GEN. STAT. ANN. §§ 22a-1 to 22a-1h (West 2006); D.C. CODE ANN. §§ 8-109.01 to 8-109.11 (LexisNexis 2005); GA. CODE ANN. §§ 12-16-1 to 12-16-8 (LexisNexis 2006); HAW. REV. STAT. ANN. §§ 343-1 to 343-8 (LexisNexis 2008); IND. CODE ANN. §§ 13-12-4-1 to 13-12-4-10 (West 2008); MD. CODE ANN., NAT. RES. §§ 1-301 to 1-305 (LexisNexis 2005); MASS. GEN. LAWS ANN. ch. 30, §§ 61–62H (West 2001 & Supp. 2009); MINN. STAT. §§ 116D.01–.06 (2008); MONT. CODE ANN. §§ 75-1-101 to 75-1-105, 75-1-201 to 75-1-207 (2009); N.Y. ENVTL. CONSERV. LAW §§ 8-0101 to 8-0117 (McKinney 2005); N.C. GEN. STAT. §§ 113A-1 to 113A-13 (2009); P.R. LAWS ANN. tit. 12, §§ 1121–1127 (2003 & Supp. 2005); S.D. CODIFIED LAWS ANN. §§ 34A-9-1 to 34A-9-13 (2004 & Supp. 2009); VA. CODE ANN. §§ 3.1–18.8, 10.1-1200–10.1.1212 (2008); WASH. REV. CODE ANN. §§ 43.21C.010–43.21C.910 (West 2009 & Supp. 2010); WIS. STAT. ANN. § 1.11 (West 2004 & Supp. 2009).

extensive administrative rules implementing the statutes.¹² The California Environmental Quality Act (CEQA)¹³ is a notable exception to the skeletal character of the little NEPAs. A California agency must do more than simply follow CEQA's information gathering procedures. To comply with CEQA, the agency must also "mitigate or avoid the significant effects on the environment of projects . . . whenever it is feasible to do so."¹⁴

On May 19, 1973, the Minnesota Legislature enacted MEPA,¹⁵ the state's little NEPA. As with other little NEPAs, the Minnesota Legislature modeled the Act after the federal statute.¹⁶ MEPA's purpose is "to force agencies to make their own impartial evaluation of environmental considerations before reaching their decisions"¹⁷ by requiring state and local governmental entities to "use all practicable means, consistent with other essential considerations of state policy" to implement the statute's policies.¹⁸ MEPA applies to any "major

12. Weiner, *supra* note 4, at 10677–78.

13. CAL. PUB. RES. CODE §§ 21000–21177 (West 2007 & Supp. 2010).

14. *Id.* § 21002.1. *See also* O'Brien, *supra* note 4, at 257–59 (discussing CEQA's substantive requirements).

15. MINN. STAT. §§ 116D.01–116D.06 (2008).

16. *See* *No Power Line, Inc. v. Minn. Env'tl. Quality Council*, 262 N.W.2d 312, 323 (Minn. 1977) (observing that MEPA is "[p]atterned on NEPA"). Although the statutes differ in certain significant respects, Minnesota courts often rely upon federal case law decided under NEPA in construing analogous MEPA provisions. *See, e.g.*, *Minn. Ctr. for Env'tl. Advocacy v. Minn. Pollution Control Agency*, 644 N.W.2d 457, 468 n.10 (Minn. 2002) (noting MEPA's "procedural protections relevant to this case are similar to the federal protections found in NEPA and therefore looking to federal case law is appropriate and helpful in this case."); *No Power Line*, 262 N.W.2d at 323 n.28 (noting the Minnesota Supreme Court has relied upon NEPA case law in interpreting MEPA); *Minn. Pub. Interest Research Group v. Minn. Env'tl. Quality Council*, 306 Minn. 370, 378–79, 237 N.W.2d 375, 380–81 (1975) (relying in part upon NEPA case law in holding that decisions regarding environmental impact statements are subject to judicial review under MEPA); *Iron Rangers Ridge Action v. Iron Range Res.*, 531 N.W.2d 874, 881–82 (Minn. Ct. App. 1995) (terming NEPA the "federal equivalent" of MEPA and citing NEPA case law in analyzing impacts and mitigation under MEPA).

17. *No Power Line*, 262 N.W.2d at 327.

18. MINN. STAT. § 116D.02, subdiv. 2 (2008). MEPA articulates nineteen broad policy goals, including fulfilling "the responsibilities of each generation as trustee of the environment for succeeding generations," preserving "important historic, cultural, and natural aspects of our national heritage, and maintain[ing], wherever practicable, an environment that supports diversity, and variety of individual choice," and minimizing "wasteful and unnecessary depletion of nonrenewable resources." § 116D.02, subdiv. 2(1), (4), (12). Section 116D.02 is very similar to NEPA Section 101, 42 U.S.C. § 4331 (2006). Although NEPA Section 101 emphasizes important policy considerations, federal courts have held that the provision does not establish

governmental action”¹⁹ that may have the potential for significant environmental effects.²⁰ In 1974, the Minnesota Environmental Quality Board (EQB) initially promulgated regulations implementing MEPA; the EQB has revised the rules periodically thereafter.²¹ Under MEPA and the EQB rules, a “responsible governmental unit” (RGU)²² discharges MEPA’s prerequisites by preparing and evaluating environmental review documents²³ and by “complying with environ-

enforceable standards of conduct and does not create a cause of action for failure to meet the goals described. Thaddeus R. Lightfoot, *Seeing the Forest and the Trees: The Minnesota Timber Harvesting GEIS Applied in Potlatch and Boise Cascade*, 29 WM. MITCHELL L. REV. 437, 440 n.20 (2002). Minnesota courts have also rejected attempts to transform MEPA’s broad policy goals into substantive standards or causes of action. *Id.*

19. § 116D.04, subdiv. 2a. The Minnesota Environmental Quality Board (EQB) has promulgated rules implementing MEPA. *See* MINN. R. 4410.0200-.6500 (2009). MEPA and the EQB rules do not define a “major governmental action.” However, MEPA and the EQB rules define a “governmental action” as an activity, “including projects wholly or partially conducted, permitted, assisted, financed, regulated, or approved by units of government including the federal government.” § 116D.04, subdiv. 1a(d); MINN. R. 4410.0200, subpart 33 (2009). A “governmental unit” is “any state agency and any general or special purpose unit of government in the state including, but not limited to, watershed districts . . . , counties, towns, cities, port authorities, housing authorities, and economic development authorities . . . but not including courts, school districts, and regional development commissions other than the metropolitan council.” § 116D.04, subdiv. 1a(e); MINN. R. 4410.0200, subpart 34. A “project” is a “governmental action, the results of which would cause physical manipulation of the environment, directly or indirectly,” with the focus on “the physical activity to be undertaken and not to the governmental process of approving the project.” MINN. R. 4410.0200, subpart 65 (2009). In short, a MEPA project is a “definite, site-specific, action that contemplates on-the-ground environmental changes, including changes in the nature of the use” that is conducted, requires the approval of, or receives financial assistance from a local, state, or federal governmental unit. *Minn. for Responsible Recreation v. Dep’t of Natural Res.*, 651 N.W.2d 533, 540 (Minn. Ct. App. 2002).

20. *See* § 116D.04, subdiv. 2a (“[w]here there is potential for significant environmental effects resulting from any major governmental action, the action shall be preceded by a detailed environmental impact statement . . .”).

21. *See* MINN. R. 4410.0200-.6500 (2009).

22. *See* § 116D.04, subdiv. 1a(e) (defining “governmental unit” as any state agency and any general or special purpose unit of government in the state including, but not limited to, watershed districts organized under chapter 103D, counties, towns, cities, port authorities, housing authorities, and economic development authorities established under sections 469.090 to 469.108, but not including courts, school districts, and regional development commissions other than the Metropolitan Council.).

See also MINN. R. 4410.0200, subpart 75 (2009) (defining “responsible governmental unit”).

23. § 116D.04, subdiv. 2a; MINN. R. 4410.0200, subpart 75.

mental review processes in a timely manner.”²⁴ The EQB rules often specify the RGU for particular categories of proposed projects.²⁵ Where the EQB rules do not specify an RGU, the RGU that will perform environmental review under MEPA is typically the government or governmental agency with the largest role in approving or supervising a project.²⁶

MEPA requires governmental entities to prepare an EIS where there is the potential for significant environmental effects resulting from any major governmental action.²⁷ The EQB rules require a so-called “mandatory” EIS for certain projects that, based upon location or character, make the potential for significant environmental effects highly likely.²⁸ If a project meets or exceeds the mandatory EIS thresholds established in the EQB rules, the governmental entity serving as the RGU must prepare an EIS before undertaking or approving the project.²⁹ Even if a project does not fall within a mandatory EIS category, an RGU must prepare a so-called “discretionary” EIS if the proposed project has “the potential for significant environmental effects.”³⁰ The RGU must consider four criteria in determining whether a project has the potential for significant environmental effects: (1) the type, extent, and reversibility of the effects; (2) the cumulative potential effects of the project; (3) the extent to which the effects are “subject to mitigation by ongoing public regulatory authority;” and (4) the extent to which other available environmental studies may anticipate and control the environmental effects of the proposed project.³¹

24. MINN. R. 4410.0400, subpart 2 (2009).

25. MINN. ENVTL. QUALITY BD., PREPARING EAWS: A GUIDELINE FOR LOCAL RGUS 5 (2005), <http://www.eqb.state.mn.us/documents/preparingeaws.pdf>.

26. *Id.*

27. § 116D.04, subdiv. 2a; MINN. R. 4410.2000, subpart 1 (2009).

28. MINN. R. 4410.2000, subpart 2 (2009); *see also* MINN. R. 4410.4400, subps. 2–25 (2009) (establishing the project thresholds for preparing a mandatory EIS).

29. *See* MINN. R. 4410.2000, subpart 2 (stating that an RGU must prepare an EIS for projects meeting or exceeding the thresholds established in MINN. R. 4410.4400); MINN. R. 4410.4400 (2009) (establishing mandatory EIS categories and the RGU for each mandatory category).

30. MINN. R. 4410.2000, subpart 3 (2009).

31. MINN. R. 4410.1700, subpart 7(A)–(D) (2009); *see also* Citizens Advocating Responsible Dev. (*CARD*) v. Kandiyohi County Bd. of Comm’rs, 713 N.W.2d 817, 832–38 (Minn. 2006) (discussing the cumulative potential effects criterion and the mitigation by ongoing public regulatory authority criterion); Minn. Ctr. for Envtl. Advocacy v. Minn. Pollution Control Agency, 644 N.W.2d 457, 468 n.10 (Minn. 2002) (discussing the mitigation by ongoing public regulatory authority criterion); Friends

In response to the Minnesota Supreme Court's decision in *CARD*,³² the EQB amended its rules to include a definition of "cumulative potential effects." Under the new definition, "cumulative potential effects" that an RGU must consider in determining to prepare an EIS include the proposed project's incremental effects, as well as the "current aggregate effects" of other past projects and future projects in the same geographic area if such projects might "reasonably be expected to affect the same environmental resources."³³ Cumulative potential effects are similar but not identical to the "cumulative impacts"³⁴ an RGU must evaluate in determining whether to prepare a generic EIS³⁵ or that a project-specific EIS may evaluate after an RGU determines to prepare such an EIS.³⁶ According to *CARD*, the difference is that in considering "cumulative potential effects," an RGU's assessment "is limited geographically to projects in the [proposed project's] surrounding area that might

of *Twin Lakes v. City of Roseville*, 764 N.W.2d 378, 380–84 (Minn. Ct. App. 2009) (same).

32. See *CARD*, 713 N.W.2d 817. The *CARD* court noted that EQB's rules lacked an explicit definition of "cumulative potential effects." *Id.* at 827.

33. MINN. R. 4410.0200, subpart 11a (2009). An RGU must consider the incremental effects of a future project in the area if a project is "actually planned" or if a "basis of expectation [for the project] has been laid." *CARD*, 713 N.W.2d at 827. In assessing whether the expectation has been laid for a future project, "an RGU must determine whether a project is reasonably likely to occur and, if so, whether sufficiently detailed information is available about the project to contribute to the understanding of cumulative potential effects." *Id.* An RGU must consider the incremental effects of past and future projects that meet the "cumulative potential effects" definition "regardless of what person undertakes the other projects or what jurisdictions have authority over the projects." *Id.*

34. A "cumulative impact" is an impact "that results from the incremental effects of the project in addition to other past, present, and reasonably foreseeable future projects regardless of what person undertakes the other projects" and may "result from individually minor but collectively significant projects taking place over a period of time." MINN. R. 4410.0200, subpart 11 (2009).

35. If it determines that a project may not be "adequately reviewed on a case-by-case basis" the EQB may order a so-called generic EIS. MINN. R. 4410.3800, subpart 1 (2009). The EQB itself may serve as the RGU for a generic EIS, or it may designate another governmental unit as the RGU. *Id.* subpart 2. Among the criteria an RGU must consider in determining whether to prepare a generic EIS is "the potential for significant effects as a result of the cumulative impacts of such projects." *Id.* subpart 5(G).

36. *CARD* held that the "cumulative impact" definition in Minn. R. 4410.0200, subpart 11, does not apply to the project-specific "cumulative potential effects" criterion in Minn. R. 4410.1700, subpart 7(B). *CARD*, 713 N.W.2d at 827; see also *supra* note 34 (discussing "cumulative impact" definition).

reasonably be expected to affect the same natural resources—for instance, a nearby lake—as the proposed project.”³⁷ A “cumulative impacts”³⁸ analysis in a project-specific EIS does not necessarily include such geographic and temporal scope limitations.³⁹

The EQB rules also include other provisions mandating an RGU evaluate a proposed project’s potential effects in the context of effects caused by other past, present, or future projects. For example, in determining the need for an EIS and preparing an EIS, an RGU must consider multiple projects and multiple stages of a single project that are “connected actions” or “phased actions.”⁴⁰ Two projects are “connected actions” if an RGU determines they are related in any of the following ways: (A) one project would directly induce the other, (B) one project is a prerequisite for the other and the prerequisite project is not justified by itself, or (C) neither project is justified by

37. *CARD*, 713 N.W.2d at 830–31.

38. The EQB rules implementing MEPA define a “cumulative impact” as an impact on the environment that “results from incremental effects of the project in addition to other past, present, and reasonably foreseeable future projects regardless of what person undertakes the other projects.” MINN. R. 4410.0200, subpart 11.

39. *CARD*, 713 N.W.2d at 831–32. A project-specific EIS must include a “thorough but succinct discussion of potentially significant direct or indirect, adverse, or beneficial effects generated [by a proposed project].” MINN. R. 4410.2300(H) (2009). The CEQ regulations implementing NEPA define “direct” and “indirect” effects. *See* 40 C.F.R. § 1508.8 (2009) (defining a “direct effect” as one caused by a proposed action that occurs at the same time and place as the proposed action and an “indirect effect” as one caused by the proposed action that is later in time or farther removed in distance but that is still “reasonably foreseeable”). The EQB rules implementing MEPA do not define “direct effects” or “indirect effects.” Similarly, the EQB rules do not identify possible geographic areas that could be used in a cumulative effects analysis. In contrast, the CEQ published a cumulative effects guidance in 1997 that suggests a possible geographic area for analysis of the cumulative effects on air quality is a “[m]etropolitan area, airshed, or global atmosphere” because “air emissions can travel substantial distances and are an important part of regional air quality.” COUNCIL ON ENVTL. QUALITY, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT 15–16 (1997).

40. MINN. R. 4410.2000, subpart 4 (2009); *see also* MINN. R. 4410.0200, subpart 9b (2009). A “[p]hased action” means two or more projects to be undertaken by the same proposer that an RGU determines: (A) will have environmental effects on the same geographic area; and (B) are substantially certain to be undertaken sequentially over a limited period of time.” *Id.* subpart 60 (2009); *see also* *Minnesotans for Responsible Recreation v. Dep’t of Natural Res.*, 651 N.W.2d 533, 541–42 (Minn. Ct. App. 2002) (discussing phased and connected actions, and holding that trails identified in four “system plans do not constitute a connected or phased action requiring environmental review because the system plans themselves are not projects.”).

itself.⁴¹ A “phased action” means two or more projects to be undertaken by the same proposer that an RGU determines: (A) will have environmental effects on the same geographic area and (B) are substantially certain to be undertaken sequentially over a limited period of time.⁴²

In addition, the EQB rules provide EIS procedures to address information that may be incomplete or unavailable. The rule applies only to an EIS, and only where an RGU determines information about a “potentially significant” environmental effect is “essential to a reasoned choice among alternatives.”⁴³ If such information is unknown, the cost of obtaining the information is “excessive,” the information cannot be obtained within the deadlines for preparing an EIS,⁴⁴ or the means to information “are beyond the state of the art,” an RGU need not analyze impacts to which the information relates but must include in the EIS only the information that the rule requires.⁴⁵ To satisfy the rule, the RGU must: (1) state in the EIS why the information is unavailable, (2) explain the relevance of the unavailable information, (3) briefly summarize existing credible scientific evidence, and (4) evaluate the impacts of the project using generally accepted theoretical approaches or research methods.⁴⁶ For example, when an RGU explains in an EIS that there are no reliable analytical techniques or modeling tools to predict the effect of discrete air emissions at a local level, the RGU satisfies the EQB requirements for demonstrating information is unavailable or incomplete.⁴⁷ Because the EQB rules provide that an EIS by definition includes any appendices,⁴⁸ an RGU may discuss incomplete or unavailable information in the appendix of an EIS.

Governmental entities consider whether a project has the potential for significant environmental effects by preparing environmental

41. MINN. R. 4410.0200, subpart 9b.

42. *Id.* subpart 60.

43. MINN. R. 4410.2500 (2009).

44. *Id.* The EQB rules establish that an RGU must determine that a final EIS is “adequate,” or complies with the requirements of MEPA, within 280 days after the RGU publishes notice of preparation of an EIS in the EQB monitor, unless “the time is extended by consent of the proposer and the RGU or by the governor for good cause.” MINN. R. 4410.2800, subpart 3 (2009).

45. *Id.*

46. *Id.*

47. *Cf.* Mayo Found. v. Surface Transp. Bd., 472 F.3d 545, 555 (8th Cir. 2006) (construing NEPA rule similar to Minn. R. 4410.2500).

48. MINN. R. 4410.2300(J) (2009).

assessment worksheets (EAWs).⁴⁹ If a proposed project meets or exceeds certain thresholds established in the EQB rules, an RGU must prepare an EAW;⁵⁰ if not, an RGU may prepare a so-called “discretionary” EAW if the proposed project “may have the potential for significant environmental effects.”⁵¹ As with an EIS, an RGU must consider connected actions or phased actions in determining the need for an EAW and preparing an EAW.⁵²

The EQB has developed an eight-page EAW form for the use of project proposers and RGUs to satisfy MEPA. According to the form, a project proposer must supply “any reasonably accessible data” the form requests, but the RGU completes the final worksheet.⁵³ The EAW form includes thirty-one questions including Question 23, which requires the RGU to describe the “type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources.”⁵⁴ According to Question 23, such air emissions include “any greenhouse gases (such as carbon dioxide, methane, nitrous oxide).”⁵⁵ Unlike an environmental assessment under NEPA, an EAW need not evaluate

49. See MINN. R. 4410.1000, subpart 1 (2009) (noting that the purpose of an EAW is to “aid in the determination of whether an EIS is needed for a proposed project” and to “serve as a basis to begin the scoping process for an EIS” if one is necessary); see also MINN. R. 4410.2100, subpart 2(A)–(B) (2009) (for projects that do not fall within the mandatory EIS categories, an EAW serves “to identify the need for preparing an EIS” and “to initiate discussion concerning the scope of the EIS if an EIS is ordered”).

50. See MINN. R. 4410.4300 (2009) (establishing mandatory EAW categories, and the RGU for each mandatory category). The Minnesota Legislature may also expressly require an EAW for a project, even though the project does not meet or exceed a mandatory EAW threshold under MINN. R. 4410.4300. See *In re Am. Iron & Supply Co.*, 604 N.W.2d 140, 143 (Minn. Ct. App. 2000) (Minnesota Legislature passed a statute requiring that the MPCA conduct an EAW on a metal shredding facility to determine whether an EIS was necessary).

51. MINN. R. 4410.1000, subpart 3 (2009). A group of at least twenty-five citizens may also petition the EQB for an EAW. MINN. R. 4410.1100, subp. 1 (2009). The petition must include “material evidence indicating that, because of the nature or location of the proposed project, there may be a potential for significant environmental effects.” *Id.* subp. 2(E). If the EQB determines that the petition complies with process requirements, it forwards the petition to the RGU. *Id.* subp. 5. The RGU then decides whether to conduct an EAW. *Id.* subp. 6.

52. MINN. R. 4410.1000, subpart 4 (2009).

53. ENVTL. QUALITY BOARD, DEPT. OF ADMIN., ENVIRONMENTAL ASSESSMENT WORKSHEET 1 (2008), <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>.

54. *Id.* at 6.

55. *Id.*

alternatives to a proposed project.⁵⁶

MEPA also includes language prohibiting certain governmental actions. The statute prohibits “state action significantly affecting the quality of the environment” and the grant of a permit “for natural resources management and development . . . where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a feasible and prudent alternative”⁵⁷ The Minnesota Environmental Rights Act (MERA), enacted two years before MEPA, contains similar language.⁵⁸ One commentator suggests this “substantive standard” requires an EIS prepared under MEPA to “determine and explore feasible and prudent alternatives.”⁵⁹ MEPA, however, does not create substantive standards that are enforceable in preparing an EIS. MEPA is an information gathering statute that imposes only procedural requirements; an EIS provides information to governmental entities but does not approve the project.⁶⁰ MEPA’s so-called “substantive standard” provides criteria for an agency to consider not when it is preparing an EIS, but when it issues permits and approves projects after an EIS is complete.⁶¹ No Minnesota court has ever construed MEPA’s prohibition on certain governmental actions to apply to environmental review.⁶²

Judicial review of an RGU’s decision on the need for an EAW, the need for an EIS, and the adequacy of an EIS is available by a declaratory judgment action commenced within thirty days of the decision.⁶³ Venue is in the district court of the county where the proposed

56. Reuther, *supra* note 5, at 10664.

57. MINN. STAT. § 116D.04, subdiv. 6 (2008).

58. §116B.09, subdiv. 2. MEPA adopts MERA’s “pollution, impairment or destruction” definition. § 116D.04 subdiv. 1a(b) (2008).

59. Reuther, *supra* note 5, at 10663.

60. *Citizens Advocating Responsible Dev. v. Kandiyohi County Bd. of Comm’rs*, 713 N.W.2d 817, 832 n.15 (Minn. 2006); *Minn. Ctr. for Env’tl. Advocacy v. Minn. Pollution Control Agency*, 644 N.W.2d 457, 468 (Minn. 2002).

61. *In re Univ. of Minn.*, 566 N.W.2d 98, 104–05 (Minn. Ct. App. 1997); *see also* § 116D.04, subdiv. 2b (governments may not issue permits or approve projects until environmental review is complete).

62. *See Minn. Ctr. for Env’tl. Advocacy*, 644 N.W.2d at 468 n.10 (noting that the question of whether MEPA “contains certain substantive protections above and beyond the procedural protections it shares with federal law is not before this court, and we will not address that issue here.”).

63. § 116D.04, subdiv. 10.

project would be undertaken.⁶⁴ In reviewing decisions of administrative agencies under MEPA on the need for an EAW, the need for an EIS, and the adequacy of an EIS, Minnesota courts examine whether substantial evidence in the administrative record supports the decisions and whether the decisions are arbitrary or capricious.⁶⁵ MEPA also provides that “any person” may bring an action against the EQB or other unit of government failing to undertake aspects of the environmental review process within the time specified under the statute, such as the statutory requirement⁶⁶ for completing an EIS within 280 days.⁶⁷

B. An Overview of the Climate Change Problem

Certain gases affect the earth’s atmosphere by allowing light energy to pass through while trapping the amount of reflected heat that the light energy releases, creating a “greenhouse effect.”⁶⁸

64. *Id.* MEPA specifically grants the EQB the right to initiate judicial review of decisions referred to in the section and to intervene as of right in any proceeding brought under subdivision 10. *Id.* Other than the EQB, section 116D.04, subdivision 10 does not state who may bring an action under the section. However, the language of subdivision 10 authorizing the EQB to “intervene as of right in any proceeding brought under this subdivision” suggests that parties other than the EQB may file actions under section 116D.04, subdivision 10.

65. *See, e.g., Minn. Ctr. for Envtl. Advocacy*, 644 N.W.2d at 464–65 (applying the standard of review codified in the Minnesota Administrative Procedures Act, MINN. STAT. § 14.69 (2008), in reviewing a decision on the need for an EIS under MEPA). Some commentators have suggested that Minnesota courts are too deferential to RGUs and that the courts should undertake a more substantive review of an RGU’s decision on the need for an EIS. *See, e.g., Stacy Lynn Bettison, The Silencing of the Minnesota Environmental Policy Act: The Minnesota Court of Appeals and the Need for Meaningful Judicial Review*, 26 WM. MITCHELL L. REV. 967, 1006 (2000); Reuther, *supra* note 5, at 10664. Such criticisms improperly invite a court to substitute its own judgment for that of an RGU and ignore that Minnesota courts have invalidated environmental review documents that fail to comply with MEPA’s procedures. Lightfoot, *supra* note 18, at 467–70.

66. *See* § 116D.04, subdiv. 2a(h) (requiring that an EIS be prepared within 280 days after notice of its preparation, unless the parties or the governor extends the time for good cause).

67. *Id.* at subdiv. 11. In addition to the two private rights of action discussed above, Minnesota Statutes section 116D.04, subdivision 13, establishes the manner in which the EQB may bring actions to enforce MEPA. Unlike subdivision 10, subdivision 13 does not contain a statement authorizing the EQB to intervene as of right. *Id.* subdiv. 13 (2008). The absence of an express right of intervention for the EQB demonstrates that subdivision 13 is limited to EQB enforcement actions, and does not allow private parties to bring an action under the subdivision.

68. James E. Hansen et al., *Climate Impact of Increasing Atmospheric Carbon Dioxide*,

Carbon dioxide is the most significant of these anthropogenic greenhouse gases.⁶⁹ Other gases, such as methane, have the same greenhouse properties as carbon dioxide.⁷⁰

In 2007, the United Nation's Intergovernmental Panel on Climate Change published its Fourth Assessment Report describing scientific progress in understanding the world's climate, as well as the human activities and natural events associated with climate change.⁷¹ The Fourth Assessment Report found global atmospheric concentrations of carbon dioxide increased from a value of approximately 280 parts per million (ppm) in the year 1750 to a value of 379 ppm in year 2005—a concentration that far exceeds the natural range of between 180 ppm and 300 ppm over the last 650,000 years.⁷² Fossil fuel use is the primary source of the increased atmospheric concentration of carbon dioxide between 1750 and 2005.⁷³ Global concentrations of other greenhouse gases, notably methane and nitrous oxide, also increased significantly between 1750 and 2005.⁷⁴ The Fourth Assessment Report states there is “a *very high confidence* that globally averaged net effect of human activities since 1750 has been one of warming,”⁷⁵ and that the warming of the climate “is unequivocal, as is evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global

213 SCIENCE 957, 964 (1981).

69. Intergovernmental Panel on Climate Change, *Summary for Policymakers, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 2* (2007) [hereinafter *IPCC*].

70. See THE CAL. CLIMATE CHANGE CTR., *MANAGING GREENHOUSE GAS EMISSIONS IN CALIFORNIA 1-7* (2010), available at http://calclimate-deprecated.berkeley.edu/research/ghg/assets/1_Introduction.pdf (discussing the properties of greenhouse gases and noting that methane and certain other gases have more intense greenhouse properties than carbon dioxide).

71. *IPCC, supra* note 69, at 2.

72. *Id.* Parts per million is the ratio of the number of greenhouse gas molecules to the total number of molecules of dry air. *Id.* at 2 n.3. The IPCC explained that the natural range of carbon dioxide in the earth's atmosphere over the last 650,000 years was “determined by ice cores.” *Id.* at 2; see also *Massachusetts v. EPA*, 549 U.S. 497, 507 n.9 (2007) (citing an earlier IPCC report in explaining that “by drilling through thick Antarctic ice sheets and [obtaining] ‘cores,’” scientists obtain extract and analyze small samples of ancient air to determine estimates of carbon dioxide levels).

73. *IPCC, supra* note 69, at 2.

74. *Id.*

75. *Id.* The IPCC employs a series of “levels of confidence” to express expert judgments regarding “the correctness of the underlying science.” *Id.* at 5, n.7. A “very high confidence” level equates to a confidence of “at least a 9 out of 10 chance of being correct.” *Id.*

average sea level.”⁷⁶ Moreover, most of the observed increase in globally averaged temperatures since the 1950s is “*very likely* due to the observed increase in anthropogenic greenhouse gas concentrations.”⁷⁷ Continued greenhouse gas emissions at or above current levels render it “*very likely*” that warming and changes to the global climate system during the twenty-first century will be larger than observed during the twentieth century.⁷⁸

In Minnesota and the Great Lakes region, temperatures between 1973 and 2003 have ranged from near average to somewhat warmer than average.⁷⁹ Between 1999 and 2003, however, average annual temperatures ranged from two to four degrees Fahrenheit warmer than the long-term annual average and up to seven degrees Fahrenheit above the long-term winter average.⁸⁰ Growing seasons in the region today are about one week longer than they were at the turn of the twentieth century, primarily because the last spring frost is occurring earlier.⁸¹ Some scientists predict that by 2025 or 2035, spring and summer temperatures in the Great Lakes region are likely to be three to four degrees Fahrenheit above current averages.⁸²

III. THE CURRENT STATUS OF CLIMATE CHANGE ASSESSMENT UNDER MEPA

A. *MEPA Litigation: The Minnesota Steel Case*

Several federal courts have addressed the nature and extent of the climate change analysis necessary to satisfy NEPA.⁸³ The issue also

76. *Id.* at 5.

77. *Id.* at 10. The IPCC report uses the term “very likely” to indicate an assessed likelihood, using expert judgment, of an outcome or a result with a greater than ninety percent probability of occurrence. *Id.* at 4 n.6.

78. *Id.* at 13.

79. UNION OF CONCERNED SCIENTISTS AND ECOLOGICAL SOC’Y OF AM., *CONFRONTING CLIMATE CHANGE IN THE GREAT LAKES REGION: IMPACTS ON OUR COMMUNITIES AND ECOSYSTEMS 12* (2003), available at http://www.ucsusa.org/assets/documents/global_warming/chapter2.pdf.

80. *Id.*

81. *Id.* at 17.

82. *Id.* To address Minnesota’s greenhouse gas emissions, the legislature in 2007 enacted the Next Generation Energy Act. MINN. STAT. § 216H (2008). The statute establishes the “goal of the state to reduce statewide greenhouse gas emissions across all sectors” to a level at least fifteen percent below 2005 levels by 2015, at least thirty percent below 2005 levels by 2025, and at least eighty percent below 2005 levels by 2050. § 216H.02, subdiv. 1.

83. See Gerrard, *supra* note 2, at 20–21 (summarizing NEPA decisions through

has been litigated under certain little NEPAs, especially in California.⁸⁴ However, in Minnesota only one decision has addressed climate change and MEPA environmental review. In *Minnesota Center for Environmental Advocacy v. Minnesota Department of Natural Resources*,⁸⁵ the Minnesota Court of Appeals held that an EIS for the proposed reactivation of a taconite mine and tailings basin by Minnesota Steel Industries adequately addressed the impact of greenhouse gas emissions, climate change, and power generation under MEPA.⁸⁶

1. *The Minnesota Steel Final EIS*

The Minnesota Steel project involved the proposed reactivation of the former Butler Taconite mine and tailings basin area near Nashwauk, Minnesota, on the Mesabi Iron Range. Iron ore in the project area was first mined in 1903, and the Butler mine itself was active between 1967 and 1985.⁸⁷ Because the Butler mine still contains approximately 1.4 billion tons of iron ore—equivalent to approximately 100 years of reserves—Minnesota Steel proposed to reactivate the mine and build an integrated ore processing and steelmaking facility on the site.⁸⁸ Mine development and plant construction would cost an estimated \$1.6 billion.⁸⁹

Under the EQB rules, the Minnesota Steel project exceeded the threshold for a mandatory EIS.⁹⁰ The Minnesota Department of

early 2008).

84. See Gerrard, *supra* note 2, at 21–22 (summarizing California CEQA decisions through early 2008); Kass, *supra* note 4, at 41 (referencing “a cluster of cases litigating CEQA climate review”).

85. No. A08-2171 2009 WL 2998037 (Minn. Ct. App. Sept. 22, 2009).

86. *Id.* at *1. The author represented Minnesota Steel Industries, LLC, now known as Essar Steel Minnesota, Ltd., in the litigation. Essar was the project proposer and intervened in the action in support of the Minnesota Department of Natural Resources.

87. MINN. DEP’T OF NATURAL RES., MINNESOTA STEEL FINAL ENVIRONMENTAL IMPACT STATEMENT 1-1 (2007), http://files.dnr.state.mn.us/input/environmentalreview/minnsteel/feis/feis_1.pdf [hereinafter Minnesota Steel FEIS]. The index to all the MEPA environmental review documents that the DNR prepared for the Minnesota Steel project is found at <http://www.dnr.state.mn.us/input/environmentalreview/minnsteel/index.html>.

88. Minnesota Steel FEIS, *supra* note 87, at 1-1.

89. *Id.* at 1-2.

90. MINN. DEP’T OF NATURAL RES., RECORD OF DECISION IN RE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE MINNESOTA STEEL, LLC STEEL MILL AND TACONITE MINE PROJECT 1 (2007), *available at* http://files.dnr.state.mn.us/input/environmentalreview/minnsteel/feis/fact_finding.pdf [hereinafter Minnesota Steel ROD]. The Minnesota Steel project required an EIS because the project

Natural Resources (DNR), the RGU for the project under the EQB rules, prepared a series of environmental review documents under MEPA culminating with a final EIS published in June 2007.⁹¹ With the assistance of MPCA, the DNR evaluated two carbon footprints for the Minnesota Steel project. The DNR initially requested that Minnesota Steel prepare an analysis of the project's carbon footprint and provided it to the MPCA for independent review and confirmation.⁹² The analysis estimated total direct and indirect carbon dioxide emissions from the project at 3.75 million metric tons per year.⁹³ The basis for the estimate was a detailed evaluation of carbon dioxide emissions from each component of the Minnesota Steel project (mining and crushing, concentrator, pelletizer, direct reduced iron production, and steel mill), as well as emissions from mining equipment and vehicles.⁹⁴ After the MPCA determined the Minnesota Steel analysis was valid, the DNR incorporated that carbon footprint

involved the development of a facility for the construction of a new metallic mineral processing facility. *Id.* (citing MINN. R. 4410.4400, subpart 8(C) (2007)). DNR is the designated RGU for such projects. *Id.*

91. Minnesota Steel FEIS, *supra* note 87.

92. MINN. DEP'T OF NATURAL RES., RESPONSES TO COMMENTS ON FINAL ENVIRONMENTAL IMPACT STATEMENT 16 (2007), *available at* http://files.dnr.state.mn.us/input/environmentalreview/minnsteel/feis/comments_response.pdf [hereinafter DNR Response]. The DNR incorporated and attached the DNR Response to its Record of Decision. Minnesota Steel ROD, *supra* note 90, at 7 (referring to the DNR Response as "Exhibit A").

93. DNR Response, *supra* note 92, at 16.

94. Minnesota Steel FEIS, *supra* note 87, at App. O, *available at* http://files.dnr.state.mn.us/input/environmentalreview/minnsteel/feis/appendix_o.pdf. The Minnesota Steel carbon footprint analysis also compared direct carbon dioxide emissions from the Minnesota Steel project with emissions from traditional steel-making facilities. According to the analysis, traditional coal-fired, blast-furnace steel-making facilities with production equivalent to the project would generate 6.44 million metric tons of direct carbon dioxide emissions annually. *Id.* The Minnesota Steel project, in contrast, would generate only 2.19 million metric tons of direct carbon dioxide emissions per year, approximately sixty-six percent less than a traditional facility with the same production rate. *Id.* Even considering combined direct carbon dioxide emissions and indirect emissions from electricity use, the final EIS estimated that the project would generate approximately fifty percent fewer greenhouse gas emissions than a traditional steel-making facility. *Id.* Minnesota Steel intended to achieve these carbon dioxide emission reductions by: (1) integrating mining, processing, and steel-making facilities, which reduces energy use; (2) on-site processing of taconite into steel, which reduces transportation emissions; and (3) using natural gas, which produces forty to fifty percent fewer carbon dioxide emissions than coal, for space heating and other heating and production applications. *Id.*

document as Appendix O to the final EIS for the project.⁹⁵ The MPCA also reviewed a carbon footprint prepared by the Minnesota Center for Environmental Advocacy (MCEA), which estimated the project would generate 4.9 million tons of carbon dioxide emissions per year.⁹⁶ The DNR found that regardless of the differing estimates in the two studies, the project would add greenhouse gases to the environment.⁹⁷

The MCEA submitted extensive comments throughout the environmental review process for the Minnesota Steel project, including on the final EIS. According to the MCEA, the final EIS was inadequate because it failed to analyze the greenhouse gas emissions associated with generating the power that the Minnesota Steel project would consume.⁹⁸ In addition, the MCEA argued that the final EIS failed to evaluate alternatives and strategies to reduce the project's greenhouse gas emissions.⁹⁹ The MCEA further argued that the final EIS failed to evaluate the consequences of the Minnesota Steel project's direct emission of greenhouse gases on the environment and that the DNR must evaluate such emissions under MEPA even though greenhouse gases are not regulated pollutants under the Clean Air Act.¹⁰⁰ Finally, the MCEA contended that the DNR must account for changes in climate when modeling the environmental effects of the Minnesota Steel project, including "how predicted changes in climate may corrupt or alter modeled impacts."¹⁰¹

In the course of determining whether the final EIS for the Minnesota Steel project satisfied MEPA's procedural requirements, the DNR responded to the MCEA's comments. With respect to additional power generation, the DNR found that existing electrical generating capacity in the region was sufficient to support the Minnesota Steel project, available power would be redistributed to meet any new demand resulting from the project, and power demand was not a "connected action" or "indirect effect" that the final EIS need

95. DNR Response, *supra* note 92, at 16.

96. *Id.*

97. *Id.*

98. Letter from Kevin Reuther et al., Minn. Ctr. for Env'tl. Advocacy, to Scott E. Ek, DNR & Jon K. Ahlness, U.S. Army Corps of Eng'rs 3-9 (July 23, 2007), http://files.dnr.state.mn.us/input/environmentalreview/minnsteel/feis/comment_2.pdf.

99. *Id.* at 9-12.

100. *Id.* at 12-16.

101. *Id.* at 16-17.

analyze.¹⁰² Regarding the alleged failure of the final EIS to analyze the effects of the project's contribution to increased levels of greenhouse gases, the DNR explained that Appendix O contained a detailed carbon footprint analysis that MPCA reviewed and approved.¹⁰³ In addition, the DNR stated that "there currently are not reliable analytical and modeling tools to evaluate the incremental impact of discrete emissions, such as those from the [Minnesota Steel] project, on global and regional climate or on any cascading incremental impacts to natural ecosystems and human ecosystems in Minnesota."¹⁰⁴ Similarly, regarding the issue of how climate change affects environmental models, the DNR maintained that there was no reliable method to accurately predict "the effects of climate change on overall modeled environmental impacts for the project" and summarized a range of the potential impacts of climate change on Minnesota.¹⁰⁵

2. *The District Court Challenge to the Final EIS*

The MCEA challenged the final EIS for the Minnesota Steel project by filing a complaint under MEPA against the DNR in Itasca County District Court on September 10, 2007.¹⁰⁶ The claims in the complaint tracked the MCEA's comments on the final EIS. The complaint alleged that the final EIS was inadequate because it failed to analyze the greenhouse gas emissions associated with the project's power consumption, a "connected action" and an "indirect effect" under MEPA.¹⁰⁷ In addition, the complaint alleged that the final EIS failed to "address global warming, indisputably today's most pressing and significant environmental challenge."¹⁰⁸ The complaint also alleged that the final EIS failed to consider alternatives and mitigation measures to reduce or eliminate greenhouse gas emissions from the project, including an "encyclopedic rather than analytical" carbon dioxide inventory that did not satisfy MEPA "because it does not discuss the significant *environmental consequences* of greenhouse gas

102. DNR Response, *supra* note 92, at 10–15.

103. *Id.* at 16–17.

104. *Id.* at 17.

105. *Id.* 17–19.

106. Complaint at 11, *Minn. Ctr. for Envtl. Advocacy v. Minn. Dep't of Natural Res.* (Itasca County Dist. Ct. 2007) (No. 31-CV-07-3338).

107. *Id.* ¶¶ 18–23.

108. *Id.* ¶ 24.

emissions.”¹⁰⁹ Finally, the complaint alleged that the final EIS did not account for the effects of climate change when modeling environmental impacts.¹¹⁰ In its prayer for relief, the MCEA asked not only for declaratory judgment that the final EIS was inadequate under MEPA, but also for injunctive relief “restraining Minnesota Steel Industries from using any permits issued pursuant to the inadequate EIS until deficiencies are corrected.”¹¹¹

Minnesota Steel intervened in the action, and the parties brought cross-motions for summary judgment on the issue of whether the final EIS satisfied MEPA. The district court granted the DNR’s motion for summary judgment, denied the MCEA’s motion for summary judgment, and held that the final EIS was adequate.¹¹² Addressing the MCEA’s argument on power generation, the court found that the administrative record supported the DNR’s conclusion that current electrical generation was sufficient to support the project’s needs for power.¹¹³ Noting that MEPA requires an EIS to evaluate a project’s “indirect effects” but does not define the term, the court cited the CEQ regulations implementing NEPA for the proposition that an “indirect effect” must be “reasonably foreseeable.”¹¹⁴ Because the Minnesota Steel project did not require additional power generation, the court concluded that generation of electricity was not an “indirect effect.”¹¹⁵ Similarly, because generation of power at existing power plants did not require any “governmental action,” generation of power for the Minnesota Steel project was not a “connected action”

109. *Id.* ¶ 28. The CEQ regulations implementing NEPA provide that an EIS “shall be analytic rather than encyclopedic.” 40 C.F.R. § 1502.2(a) (2009). The EQB rules require that the analysis in an EIS be “thorough but succinct.” MINN. R. 4410.2300(H) (2009).

110. Complaint, *supra* note 106, ¶¶ 30–33.

111. *Id.* at 10.

112. Findings of Fact, Conclusions of Law, Order for Judgment and Memorandum at 5, *Minn. Ctr. for Envtl. Advocacy v. Minn. Dep’t of Natural Res.* (Itasca County Dist. Ct. Oct. 15, 2008) (No. 31-CV-07-3338) [hereinafter Order for Judgment]. The district court found Minnesota Steel’s position “consistent with [the] DNR’s position and argument” and did not expressly rule on Minnesota Steel’s motion for summary judgment. *Id.* at 14 n.3.

113. *Id.* at 9. According to the district court, “it is not entirely inconceivable that there may be enough excess base load capacity in the Mid-Continent Area Power Pool to power the project.” *Id.* at 9–10. The Mid-Continent Area Power Pool is the electrical system likely to supply the Minnesota Steel project with power. *Id.*

114. *Id.* at 10 (citing 40 C.F.R. § 1508.8).

115. *Id.*

that the final EIS must evaluate.¹¹⁶

With respect to alternatives and mitigation measures, the court found that the final EIS discussed a wide variety of alternatives, including a no action alternative.¹¹⁷ The DNR also included summaries of the evaluation of alternatives in the final EIS, as well as a discussion of and citations to technical memoranda providing additional detail on the alternatives analysis.¹¹⁸ Regarding mitigation, the court observed that the project itself was a mitigation measure, using approximately thirty percent less energy than a traditional steelmaking facility.¹¹⁹ In addition, the court held that the final EIS adequately addressed the question of cumulative impacts because: (1) the project would add a relatively insignificant amount of carbon dioxide to the atmosphere, (2) there was no support in the record to find the cumulative effects of the Minnesota Steel proposal and other related projects would have a significant effect on global climate change, (3) the DNR explained it was beyond the state of the art to determine the cumulative impacts from the Minnesota Steel proposal and other projects on climate change, and (4) the information in the final EIS was sufficient to “raise the issue of global climate change in the minds of decision-makers and provide relevant information about the [Minnesota Steel] Project’s greenhouse gas emissions.”¹²⁰

Regarding the alleged failure of the final EIS to address climate change in environmental models, the court noted that the DNR explained accounting for climate change in models was beyond the state of the art and highly speculative.¹²¹ The DNR acknowledged that global climate change is “a reality,” but that the predicted effects of

116. *Id.* A “connected action” occurs when “one project would directly induce the other,” when “one project is a prerequisite for the other and the prerequisite project is not justified by itself,” or when “neither project is justified by itself.” MINN. R. 4410.0200, subpart 9b (2009). The EQB rules require an EIS to evaluate the environmental effects of connected action. *See supra* notes 40–42 and accompanying text. A “project” is a “governmental action” that causes a physical manipulation of the environment. *Id.* subpart 65. A “governmental action” is an activity including “projects wholly or partially conducted, permitted, assisted, financed, regulated, or approved by governmental units. . . .” *Id.* subpart 33. According to the district court, an existing power plant does not require new governmental approvals to generate power, it is not a MEPA “project,” and it cannot be a “connected action.” *See Order for Judgment, supra* note 112, at 10.

117. *See Order for Judgment, supra* note 112, at 11.

118. *Id.*

119. *Id.* at 11–13.

120. *Id.* at 11–12.

121. *See id.* at 14.

climate change are “indefinite,” include “a broad range of potential outcomes,” and that “more precise information would be necessary to model the effects of global climate change on the [Minnesota Steel] Project area.”¹²² As a result, DNR “minimally satisfied” MEPA’s requirements for discussing information that is incomplete or unavailable.¹²³

In conclusion, the court observed that the Minnesota Steel project offered a more efficient alternative than a traditional steel-making facility and would produce fewer greenhouse gas emissions than traditional steel production.¹²⁴ The record, according to the court, “demonstrates that the DNR took a hard look at the issues involved and engaged in reasoned decision making” in determining the final EIS satisfied the requirements of MEPA.¹²⁵ However, the court opined that there were “glaring gaps between the current status of the law and the scientifically established connection between greenhouse gas emissions caused by human activity and global climate change.”¹²⁶ Because “MEPA, as currently drafted, is geared to analysis and modeling of state, regional or local effects on the environment,” the court stated that the statute, “as now written, does not seem to be up to the task of analyzing how greenhouse gas emissions from projects like [Minnesota Steel] should be accounted for on the local, state, national and even global scale.”¹²⁷ Given the “lack of regulation of greenhouse gases and the limits in the MEPA procedures,” the court concluded that under “the current status of the law, the [final]

122. *Id.* at 15. The court also distinguished *Natural Resources Defense Council v. Kempthorne*, a NEPA case in which plaintiffs offered specific studies and data in the administrative record regarding climate change in California that government agencies acknowledged would adversely affect a proposed water diversion project’s water storage strategies. 506 F. Supp. 2d 322 (E.D. Cal. 2007). The federal government’s biological opinion for the project nonetheless failed to include any discussion of climate change and the court held that the biological opinion did not comply with the Endangered Species Act. *Id.* at 368. Distinguishing *Kempthorne*, the court found that DNR “did not completely ignore evidence about the predicted effects of global climate change” and included in the record information regarding the effects of climate change on Minnesota. *See* Order for Judgment, *supra* note 112, at 14. The court also found that DNR properly determined the information was too speculative to use in modifying environmental models. *Id.*

123. *See* Order for Judgment, *supra* note 112, at 15.

124. *Id.*

125. *Id.*

126. *Id.*

127. *Id.*

EIS was adequate.”¹²⁸

The court’s criticism of MEPA as not being “up to the task” of analyzing greenhouse gas emissions is puzzling. The DNR, according to the court, analyzed greenhouse gas emissions from the Minnesota Steel project using the best scientific procedures available.¹²⁹ In considering certain environmental effects, such as determining the cumulative impacts of the Minnesota Steel project’s discrete greenhouse gas emissions on global climate change, the DNR explained that the analysis was beyond the state of the art.¹³⁰ For other issues of concern, such as altering environmental impact models to account for climate change, the DNR clarified that general information with respect to the changing climate was too speculative to rely upon.¹³¹ The court held that the information the DNR included in the final EIS on climate change issues complied with MEPA’s requirements to identify and discuss incomplete or unavailable information, although the court opined that the DNR “minimally satisfied” the requirements and that the DNR’s response “may not have been ideal.”¹³² A careful read of the opinion reveals the court was justifiably concerned that the science of modeling may not yet be “up to the task” of evaluating the cumulative impacts of discrete greenhouse gas emissions on the global climate.¹³³ However, nothing in the opinion

128. See Order for Judgment, *supra* note 112, at 16. Minnesota Steel argued that the Clean Air Act does not regulate the emission of carbon dioxide and other greenhouse gases. *Id.* at 8. Similarly, it argued that the Next Generation Energy Act articulated the unenforceable “goal of the state to reduce statewide greenhouse gas emissions across all sectors” to a level at least fifteen percent below 2005 levels by 2015, at least thirty percent below 2005 levels by 2025, and at least eighty percent below 2005 levels by 2050. Minnesota Steel’s Memorandum in Support of its Motion for Summary Judgment at 4–5, *Minn. Ctr. for Envtl. Advocacy v. Minn. Dep’t of Natural Res.*, No. 31-CV-07-3338 (Itasca County Dist. Ct. Oct. 15, 2007) (citing MINN. STAT. § 216H.02, subdiv. 1 (2008)). Where an agency lacks the statutory or regulatory authority to prevent certain environmental effects, Minnesota Steel argued, it need not consider such effects under NEPA, and by analogy under MEPA. *Id.* at 4–5 (citing *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 770 (2004)). Minnesota Steel also argued that the court lacked subject matter jurisdiction to grant MCEA’s request for injunctive relief to prevent Minnesota Steel from relying upon the governmental permits and approvals for the project, because only procedure available for obtaining judicial review of such permits and appeals was by petition of certiorari in the court of appeals. *Id.* at 19–21. The court did not address these arguments.

129. See Order for Judgment, *supra* note 112 at 16.

130. See *id.* at 15–16.

131. See *id.*

132. See *id.* at 15.

133. *Id.* at 16.

supports the notion that environmental review documents prepared under MEPA, as currently drafted, are incapable of developing information that raises the issue of global climate change in the minds of decision-makers and identifies those instances where evaluation of a project's potential effects on the global climate is beyond the existing scientific state of the art.

3. *The Court of Appeals Opinion*

MCEA sought review of the *Minnesota Steel* district court decision in the court of appeals. On appeal, the parties essentially reiterated the arguments made in the district court on cross-motions for summary judgment. The court of appeals affirmed the district court, finding that the DNR adequately addressed the environmental effects of the Minnesota Steel project's greenhouse gas emissions in compliance with MEPA.¹³⁴

Rejecting MCEA's argument that the final EIS contained no substantive discussion of the Minnesota Steel project's potential climate change effects, the court of appeals held that the DNR "clearly considered the impact of the project's greenhouse-gas emissions."¹³⁵ In addition, the court observed that the DNR included Appendix O, the Minnesota Steel carbon dioxide emission footprint and comparison, in the final EIS and also considered the carbon footprint the MCEA provided in comments during the environmental review process.¹³⁶ Accordingly, the court rejected the notion that the DNR "entirely failed to consider the issue of greenhouse-gas emissions."¹³⁷

In addition, the court of appeals held that the DNR complied with MEPA in determining that it was not within the current state of the art to analyze the effects of the Minnesota Steel project's discrete

134. See *Minn. Ctr. for Envtl. Advocacy v. Minn. Dep't of Natural Res.*, No. A08-2171, 2009 WL 2998037, at *1 (Minn. Ct. App. Sept. 22, 2009).

135. *Id.* at *3.

136. *Id.*

137. *Id.* For further support, the court cited *White v. Minn. Dep't of Natural Res.*, 567 N.W.2d 724, 730 (Minn. Ct. App. 1997) (stating that an agency action is arbitrary and capricious if the agency entirely fails to consider an important aspect of the problem). *Minn. Ctr. For Envtl. Advocacy*, 2009 WL 2998037, at *2. The court of appeals also noted that the parties "disagree as to whether NEPA, MEPA, or Minn. Stat. § 216H.02, subdiv. 1 (2008), requires that an EIS include a consideration of the impact of greenhouse-gas emissions." *Id.* at *3 n.5. "Because the DNR clearly considered" greenhouse gas emissions, the court found that it "need not address whether the DNR was required to consider" the impact. *Id.*

greenhouse gas emissions.¹³⁸ The DNR explained in the final EIS that a reliable model to evaluate the project's greenhouse gas emissions on the regional or global climate does not exist.¹³⁹ Moreover, the DNR found that it could not predict the exact effects of the project's greenhouse gas emissions or the effects of any measures to mitigate those emissions, but considered two carbon footprint studies and greenhouse gas mitigation measures, including the use of an integrated design and biodiesel fuels.¹⁴⁰ The DNR also noted that it is the state's policy to "aggressively reduce greenhouse gas emissions in Minnesota during the coming years" and that Minnesota Steel incorporated many measures to reduce carbon dioxide emissions into the project's design.¹⁴¹ As a result, the court of appeals held that the DNR satisfied the procedures in the EQB rule for discussing incomplete or unavailable information in an EIS.¹⁴²

The court of appeals also found that the DNR satisfied the incomplete or unavailable information rule in determining that modifying environmental models to account for climate change was beyond the state of the art.¹⁴³ The DNR stated that there are no reliable models to determine the effects of climate change on the overall modeled environmental effects of a project; acknowledged that global climate change is occurring and will affect the local climate in the project area; briefly summarized the potential impacts of climate change on forests, water resources, and precipitation; and evaluated climate change impacts by noting that it would rely upon valid historical data and reasonably foreseeable events.¹⁴⁴ In addition, the court of appeals found that the DNR modeled environmental impacts in the final EIS by "using an existing data set that has undergone review and quality assurance measures" and observing that the data could not "be readily modified to address various projected scenarios due to climate change."¹⁴⁵ MCEA also failed to present a climate change model to the DNR during the environmental process for the Minnesota Steel project.¹⁴⁶ According to the court, the DNR met MEPA's requirements by concluding that the "assessment of

138. *Id.* at *3.

139. *Id.* at *4.

140. *Id.*

141. *Id.* at *5.

142. *Id.* (citing MINN. R. 4410.2500 (2009)).

143. *Id.* at *6.

144. *Id.* at *6-7.

145. *Id.* at *8.

146. *Id.*

likely climate change on the project's environmental effects is beyond the state of the art."¹⁴⁷

Regarding mitigation and alternatives, the court of appeals found that the final EIS satisfied MEPA by comparing greenhouse gas emissions from the Minnesota Steel project with emissions from traditional, non-integrated steel-making processes.¹⁴⁸ The court, citing *Minnesota Center for Environmental Advocacy v. Minnesota Pollution Control Agency*,¹⁴⁹ also rejected MCEA's argument that MEPA requires an EIS to discuss mitigation designed "to reduce or eliminate the environmental impacts of a project *as proposed*" and that "mitigation measures cannot be those incorporated into a proposed project."¹⁵⁰ Finally, the court held that electrical power generation for the Minnesota Steel project did not constitute a "connected action" or an "indirect effect" because the administrative record supported the DNR's determinations that the project would not require construction of a new power plant or cause an increase in power production.¹⁵¹ The MCEA did not seek review of the court of appeals' decision in the Minnesota Supreme Court.

Although unreported, the court of appeals opinion in *Minnesota Steel* offers three significant observations regarding climate change and MEPA environmental review. First, without expressly deciding whether MEPA requires an RGU to evaluate a project's climate change impacts, the court implies that greenhouse gas emissions are a type of environmental effect to be considered in environmental review under the statute.¹⁵² If the environmental impacts of the

147. *Id.*

148. *Id.* at *5.

149. 644 N.W.2d 457, 466 (Minn. 2002) (holding that mitigation measures under MEPA may be "incorporated into the project design").

150. *Minn. Ctr. for Env'tl. Advocacy*, 2009 WL 2998037, at *5 n.6.

151. *Id.* at *8-10. Because it held that the final EIS complied with MEPA, the court declined to reach the issue of whether it had subject matter jurisdiction over Minnesota Steel's permits. *Id.* at *10. Minnesota Steel argued that the court lacked subject matter jurisdiction over the permits because MCEA failed to challenge the permits by filing timely petitions for certiorari. Brief of Respondent-Intervenor Minnesota Steel Industries, LLC at 41-53, *Minn. Ctr. for Env'tl. Advocacy v. Minn. Dep't of Natural Res.*, No. A08-2171 (Minn. Ct. App. Apr. 1, 2009).

152. The court of appeals noted that the parties disagreed as to whether MEPA requires a climate change analysis, but then cited the EQB rule mandating that an EIS must contain "a thorough but succinct discussion of potentially significant direct or indirect, adverse, or beneficial effects" and opined that DNR "clearly considered" the environmental impacts of the Minnesota Steel project's greenhouse gas emissions. *Minn. Ctr. for Env'tl. Advocacy*, 2009 WL 2998037, at *3 n.5 (citing MINN. R.

greenhouse gas emissions from a proposed project constitute a direct or indirect effect, as the court of appeals suggests, MEPA requires an evaluation of such impacts and need not be amended to address the issue of climate change.¹⁵³ Second, the *Minnesota Steel* opinion recognizes that certain analyses relevant to climate change, such as determining the impacts of a project's discrete greenhouse gas emissions or how changes in the climate may affect models used to forecast a project's environmental effects, are beyond the state of the art.¹⁵⁴ The uncertainty inherent in predicting climate change and the lack of reliable methodology to model the effects of discrete greenhouse gas emissions make it critically important that courts recognize an RGU's ability under the EQB rules to discuss the limitations of a greenhouse gas emissions evaluation and still satisfy MEPA. Third, the *Minnesota Steel* court correctly rejected MCEA's notion that mitigation, including measures to reduce greenhouse gas emissions, must eliminate the environmental impacts of a project as proposed.¹⁵⁵ The MCEA's construction of MEPA, which is contrary to the Minnesota Supreme Court's decision in *Minnesota Center for Environmental Advocacy v. Minnesota Pollution Control Agency*,¹⁵⁶ punishes project proposers and RGUs that elect to incorporate mitigation measures into a project's design rather than adding the measures after design is complete.

B. MPCA's Carbon Footprint Guidance

In the wake of the MCEA's challenge of the Minnesota Steel final EIS, the MPCA turned its attention to the analysis of climate change and greenhouse gas emissions in environmental review documents prepared under MEPA. In January 2008, four months after the MCEA filed the *Minnesota Steel* complaint, MPCA Assistant Commissioner David Thornton prepared a short internal office memorandum to Commissioner Brad Moore on the subject of climate change and environmental review.¹⁵⁷ The memorandum acknowledged that

4410.2300(H) (2007)).

153. See *infra* Part IV.A.

154. 2009 WL 2998037, at *3, *8.

155. See *id.* at *5 n.6.

156. 644 N.W.2d 457, 466 (Minn. 2002).

157. Memorandum from David Thornton, Minn. Pollution Control Agency Assistant Comm'r, to Brad Moore, Minn. Pollution Control Agency Comm'r, entitled "Incorporating Climate Change Issues in Environmental Review and Evaluating Energy Efficiency in Permitting" (Jan. 22, 2008) [hereinafter MPCA Climate Change

“[i]ssues relating to climate change” under MEPA had been raised “in several recent environmental review actions,” including the *Minnesota Steel* litigation.¹⁵⁸

Thornton’s memorandum urged MPCA to develop a “pro-active approach” in analyzing greenhouse gas emissions and climate change in environmental review.¹⁵⁹ Although the *Minnesota Steel* litigation “may provide [MPCA] with clearer direction as to how we ultimately should proceed” in addressing climate change under MEPA, the memorandum recommended three immediate actions.¹⁶⁰ First, the memorandum suggested that when the MPCA is the RGU, a project proposer should calculate a project’s expected greenhouse gas emissions using the general reporting protocol developed by The Climate Registry.¹⁶¹ Second, the memorandum proposed developing information on “lifecycle GHG [greenhouse gas] emissions for key sectors, to help describe the cradle to grave emissions of their activity.”¹⁶² Because such an analysis “will take some effort and will be more challenging for some sectors than others,” the memorandum

Memo].

158. *Id.* at 1.

159. *Id.*

160. *Id.*

161. *Id.* At the time of the memorandum, The Climate Registry’s general reporting protocol was available only in draft form. *Id.* The MPCA Climate Change Memo noted that The Climate Registry is “supported by over 40 U.S. states and tribes as well as states and provinces in Mexico and Canada,” and had developed “an approach for reporting facility level emissions that uses robust quantification methods to track both direct and indirect emissions.” *Id.* Because The Climate Registry draft protocol “is designed for existing facilities,” the memorandum recommended that MPCA “should work with representatives of The Climate Registry to identify key areas to guide a proposed project” and noted that the draft protocol was available on The Climate Registry’s web site. *Id.*

162. *Id.* Life cycle assessment is a “cradle-to-grave” method of assessing industrial systems that evaluates the cumulative environmental impacts, including air emissions, generated throughout the life of a product beginning with the gathering of raw materials from the earth to create the product and ending with the ultimate disposal of the product. *See* U.S. ENVTL. PROT. AGENCY, OFFICE OF RESEARCH AND DEVELOPMENT, *Life Cycle Assessment: Principles and Practice* 1–6 (May 2006) (describing life cycle assessment principles). By considering all stages of a product’s life, the analysis attempts to provide a more comprehensive analysis than traditional environmental assessments, which tend to focus on a product’s manufacture and do not always consider the environmental effects associated with raw material extraction, material transportation, and ultimate product disposal. *Id.* A greenhouse gas life cycle assessment would include a “cradle-to-grave” evaluation of all greenhouse gas emissions associated with a product, from the gathering of raw materials through the product’s manufacture and ultimate disposal. *Id.*

emphasized that the MPCA should give priority to developing lifecycle greenhouse gas emissions information “based in part on the number of pending actions” and suggested an initial focus on the biofuels and mining sectors.¹⁶³ Third, the memorandum recommended certain MPCA actions regarding climate change analysis and cumulative effects.¹⁶⁴ According to Thornton, the MPCA needed to “characterize the cumulative impacts of the proposed project’s GHG emissions” by describing such emissions “relative to the cumulative global total” and then assessing the cumulative global impacts of greenhouse gas emissions on the environment.¹⁶⁵ Although the memorandum suggested including “up-to-date information about the current scientific understanding on the range of effects of world-wide GHG emissions on the global, regional and, if possible, local environment,” it recommended against attempting to model the impact on the environment of greenhouse gas emissions from individual facilities.¹⁶⁶ Consistent with the DNR’s and MPCA’s responses to the MCEA’s comments on the Minnesota Steel EIS, the memorandum opined that the cost of such modeling would be “considerable” and that “there is currently no reliable analytical technique or model to accurately determine the effects of [greenhouse gas emissions] of one facility” on the environment.¹⁶⁷

Six months after Thornton’s memorandum, the MPCA issued a general guidance document for developing a carbon footprint in MEPA environmental review where the MPCA is the RGU.¹⁶⁸ The MPCA general guidance notes that Question 23 of the EAW form includes a list of stationary source air emissions that an EAW should evaluate, including emissions of greenhouse gases, but states that past EAWs often failed to identify such emissions.¹⁶⁹ According to MPCA,

163. MPCA Climate Change Memo, *supra* note 157, at 1.

164. *Id.*

165. *Id.* at 1–2.

166. *Id.* at 2.

167. *Id.* at 2.

168. MINN. POLLUTION CONTROL AGENCY, GENERAL GUIDANCE FOR CARBON FOOTPRINT DEVELOPMENT IN ENVIRONMENTAL REVIEW (July 2008), *available at* <http://www.pca.state.mn.us/publications/p-ear1-07.pdf> [hereinafter MPCA CARBON FOOTPRINT GUIDANCE]. In September 2009, MPCA issued a revised guidance that included certain minor format and language changes but did not make any substantive modifications.

169. *Id.* at 1. Question 23 of the EAW form requires information regarding the “type, sources, quantities, and compositions of all stationary source air emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources,” including the emissions of any greenhouse gases (such as carbon dioxide,

the guidance “will assist project proposers to more fully respond to Question 23 when submitting project data to the MPCA to prepare an EAW.”¹⁷⁰

The MPCA guidance requests that project proposers include information regarding the emission of six greenhouse gases when preparing an EAW. The six greenhouse gases to be reported in the EAW are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).¹⁷¹ Noting that the state of Minnesota was a “founding member” of The Climate Registry, the guidance states that “to the maximum degree possible” project proposers should report greenhouse gas emissions using the guidelines in the General Reporting Protocol of The Climate Registry.¹⁷² Reporting should include any “direct” emissions of the six identified greenhouse gases, as well as the “indirect” emissions of the same six greenhouse gases generated by a project’s “consumption of purchased electricity and steam.”¹⁷³ According to the MPCA guidance, The Climate Registry’s methodologies, models, or emissions factors¹⁷⁴ for calculating a

methane, nitrous oxide) and ozone-depleting chemicals (chloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride).” Question 23 also requires a description of the “impacts on air quality” of such emissions and “any proposed pollution prevention techniques and proposed air pollution control devices.” MINN. ENVTL. QUALITY BD., ENVIRONMENTAL ASSESSMENT WORKSHEET FORM 6 (Aug. 2008), *available at* <http://www.eqb.state.mn.us/documents/EAW%20August2008Revision2-forpdf.pdf>.

170. MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 1. The guidance noted that for an EIS, “the scoping process will determine what information to include.” *Id.*

171. *Id.* at 1–2. Discussing emissions of other greenhouse gases, including chlorofluorocarbons (CFCs), is “optional” under the guidance. *Id.* at 2–3.

172. *Id.* at 2.

173. *Id.* at 3. As discussed in note 39, *supra*, unlike the CEQ regulations implementing NEPA, MEPA and the EQB rules implementing the statute do not define “direct” or “indirect” effects. The CEQ rules define “direct effects” as effects “which are caused by the action and occur at the same time and place” and “indirect effects” as effects “which are caused by the action and are late in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8 (a)–(b) (2009).

174. An “emissions factor” is a representative value that attempts to “relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.” Emissions Factors Program Improvements, Advanced Notice of Proposed Rulemaking, 74 Fed. Reg. 52723, 52724 (Oct. 14, 2009) (codified at 40 C.F.R. pts. 60–61, 63). The factors facilitate the ability to estimate emissions from a variety of air pollution sources and are typically averages of available data collected through performance testing. Emissions factors are assumed to be

project's expected greenhouse gas emissions "are preferred to those from other sources."¹⁷⁵ However, because The Climate Registry's quantification protocols are "somewhat limited in scope," where no approved Climate Registry methodology is available a project proposer may choose among other available methodologies to quantify greenhouse gas emissions in an EAW.¹⁷⁶

Consistent with The Climate Registry protocols, project proposers must report greenhouse gas emissions in CO₂-equivalent tons.¹⁷⁷ The MPCA guidance also includes CO₂-equivalent ton emission factors for certain commercial fuels, waste fuels, and biomass material.¹⁷⁸ In addition, for environmental review of biomass projects, the MPCA guidance "highly recommends" a greenhouse gas lifecycle analysis, noting that the MPCA is preparing a generic sector-wide lifecycle analysis for biofuel facilities.¹⁷⁹ A lifecycle analysis is not necessary in the carbon footprint report for other facilities.¹⁸⁰

representative of the average emissions for all facilities in a particular source category.
Id.

175. MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 4.

176. *Id.* The MPCA Carbon Footprint Guidance includes a table that lists categories for which no Climate Registry methodology exists or for which Climate Registry methodology may be "insufficient," and provides "substitute sources and emission factors." *Id.* at 4-5.

177. *Id.* at 2. A "one-ton CO₂-equivalence emission of a substance" is "an emission with the same global warming potential over a given time period as the emission of one ton of fossil CO₂." *Id.*

178. *Id.* at 8-9.

179. *Id.* at 3.

180. *Id.* In addition to the MPCA Carbon Footprint Guidance, in July 2008 MPCA issued a memorandum requesting that project proposers submit an energy and greenhouse gas efficiency analysis for any project that increases the potential to emit any regulated air pollutant, or if the proposed project would require an Air Emissions Risk Analysis (AERA). Memorandum from James L. Warner, Div. Dir., Indus. Div., MPCA, to Affected Air Permit Applicants, entitled "Completion of a Greenhouse Gas Emissions Evaluation," July 16, 2008 [hereinafter MPCA GHG Emissions Evaluation Memo]. An AERA is MPCA's method to evaluate the "cumulative potential effects" of a proposed project's emission of criteria air pollutants and toxic air pollutants as part of an EAW. MINN. POLLUTION CONTROL AGENCY, CUMULATIVE AIR EMISSIONS RISK ANALYSIS AT THE MPCA—BACKGROUND DOCUMENT 1 (Mar. 2009). MPCA requires an AERA for any proposed project that exceeds the thresholds under MEPA for a mandatory EAW or a mandatory EIS, or for any project that will emit more than 100 tons per year of a single criteria pollutant after the application of air pollution control equipment. MINN. POLLUTION CONTROL AGENCY, AIR EMISSIONS RISK ANALYSIS GUIDANCE 5 (Sept. 2007). If the greenhouse gas emissions evaluation is required, a project proposer must submit the evaluation with an application for an MPCA air emissions permit. MPCA GHG Emissions Evaluation Memo at 1.

By its terms, the MPCA guidance applies only to EAWs where the MPCA is the RGU and where the project must also obtain an air emissions permit. However, RGUs other than the MPCA are relying upon the guidance to develop carbon footprints in preparing EISs and EAWs for proposed projects under MEPA. For example, in October 2009 the DNR published a draft EIS for the NorthMet Mine and Ore Processing Facilities Project in St. Louis County, Minnesota.¹⁸¹ PolyMet Mining, Inc., proposes to construct and operate an open-pit mine and processing facility on the site to process low-grade sulfide-bearing ore into finished copper metal and various copper, nickel, cobalt, and precious metal concentrates and precipitates.¹⁸² The discussion of greenhouse gas emissions in the draft NorthMet EIS expressly references the MPCA carbon footprint guidance and the MPCA greenhouse gas evaluation guidance.¹⁸³ In addition, the draft NorthMet EIS includes a greenhouse gas emissions and climate change impact analysis for “direct and indirect source equipment” that uses “generally accepted emission factors and estimation methods from the World Resource Institute Greenhouse Gas Protocol Standard, the IPCC, and the MPCA General Guidance on Carbon Footprint in Environmental Review.”¹⁸⁴ The draft EIS also references an extensive greenhouse gas and climate change evaluation report for the proposed project, which provides a full quantitative analysis of greenhouse gas emissions, project efficiency, and greenhouse gas reduction measures.¹⁸⁵

C. Attempts to Amend MEPA

Soon after the district court in *Minnesota Steel* opined that MEPA was not “up to the task” of analyzing greenhouse gas emissions, MCEA pursued a “legislative fix” to the statute.¹⁸⁶ Whether MEPA as

181. MINN. DEP'T OF NAT. RES., NORTHMET PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (Oct. 2009).

182. *Id.* at S-1 to S-2. The author's firm represents PolyMet Mining, Inc., with respect to the proposed NorthMet project.

183. *Id.* at 4.6-30.

184. *Id.* at 4.6-32. Consistent with the DNR's position in the Minnesota Steel litigation and with the January 2008 Thornton memorandum, the draft NorthMet EIS states that no analytical or modeling tools are available “to reliably evaluate the incremental impact of a project's discrete greenhouse gas emissions on the global or regional climate.” *Id.*

185. *See id.* at 4.6-32 (referencing Barr 2009, *NorthMet Project Greenhouse Gas and Climate Change Evaluation Report*).

186. Reuther, *supra* note 5, at 10665.

currently drafted is adequate to develop information addressing greenhouse gas emissions and climate change effects is a legitimate policy debate.¹⁸⁷ The proposed MCEA amendment to MEPA, however, is not up to the task of “fixing” the statute.

The MCEA proposed to amend MEPA by adding a new subdivision addressing the evaluation of greenhouse gas emissions. Entitled “greenhouse gases,” the new subdivision would require an RGU that prepares an EAW, an EIS, or an “alternative urban areawide review”¹⁸⁸ to “identify and consider alternatives and mitigation measures that will reduce, eliminate, or offset any greenhouse gas emissions resulting from the project.”¹⁸⁹ To ensure environmental review documents evaluate greenhouse gas emissions from power generation, the amendment proposes that “[e]missions from energy consumed by a project are considered a result of the project.”¹⁹⁰ Under the amendment, “greenhouse gas emissions” are “direct and indirect emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and any other gases that contribute to global warming from anthropogenic sources.”¹⁹¹

The proposed amendment requires both too little and too much environmental review. As a threshold matter, the amendment is inadequate because it does not specifically require an RGU to identify and consider greenhouse gas emissions from a proposed project. Rather, under the amendment an RGU need only “identify and consider alternatives and mitigation measures” to reduce greenhouse

187. Amending MEPA to require an evaluation of greenhouse gas emissions and climate change impacts may be unnecessary in light of Question 23 in the EAW form, which requests information regarding gases, and the MPCA guidance for developing a carbon footprint when responding to Question 23. *See infra* Part IV.A.

188. An “alternative urban areawide review” or AUAR under MEPA is a type of “alternative” environmental review process that a unit of local government may use instead of preparing an EAW or an EIS. *See* MINN. R. 4410.3610 (2009). The AUAR reviews “anticipated residential, commercial, warehousing, and light industrial development and associated infrastructure” within a particular geographic area. *Id.* at subpart 1. Upon completion of the AUAR document, proposed projects within the AUAR’s boundaries that are consistent with the AUAR’s development assumptions and proposed mitigation measures are typically exempt from project-specific environmental review, such as an EAW or EIS. *Id.* at subpart 2.

189. Minnesota Senate File No. 549, § 4, subdiv. 2c, 86th Legis., 1st Sess. (Minn. 2009); *see also* Reuther, *supra* note 5, at 10665 (describing the proposed amendment).

190. *Id.*

191. *Id.*

gas emissions.¹⁹² The amendment is also flawed because it requires too much. The amendment's language mandates that RGUs consider alternatives in an EAW or an AUAR, something MEPA and the EQB rules implementing the statute do not require.¹⁹³ The proposal should either amend MEPA to require an alternatives analysis for all EAWs and AUARs, or eliminate the specific requirement that EAWs and AUARs include a greenhouse gas alternatives array.

In addition, the proposal's reference to identifying and considering "alternatives and mitigation that will reduce, eliminate, or offset any greenhouse gas emissions" appears to improperly conflate the distinct concepts of mitigation measures and project alternatives. MEPA distinguishes between mitigation to reduce the effects of a proposed project discussed in an EIS and alternatives to that project. The distinction is important because MEPA and the EQB rules implementing the statute require that an EIS analyze mitigation measures and alternatives differently.

Under MEPA, an alternative is a way of accomplishing the purpose and need of a proposed project in a different manner. MEPA requires an EIS to "discuss[] appropriate alternatives to the proposed action and their impacts."¹⁹⁴ An alternative "may be excluded from analysis in the EIS if it would not meet the underlying need for or purpose of the project."¹⁹⁵ In short, an EIS need not consider an alternative unless the alternative meets all of the purposes of a proposed project.¹⁹⁶

Mitigation measures differ from alternatives to a proposed action. Rather than constituting an alternative manner in which to carry out a project, mitigation encompasses measures designed to reduce or avoid the adverse environmental effects of the proposed action or alternatives to the proposed action.¹⁹⁷ Because they are intended to

192. Minnesota Senate File No. 549, § 4, subdiv. 2c; 86th Legis., 1st Sess. (Minn. 2009).

193. An EAW need not evaluate alternatives. *See supra* note 56 and accompanying text. Because it contains a content and format "similar to that of the EAW," an AUAR also need not evaluate alternatives. MINN. R. 4410.3610, subpart 4 (2009).

194. MINN. STAT. § 116D.04, subdiv. 2a (2008); *see also* MINN. R. 4410.2300(G) (2009) (requiring that an EIS evaluate "reasonable alternatives to the proposed project").

195. MINN. R. 4410.2300(G) (2009).

196. *Cf. Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 550 (8th Cir. 2006) (construing NEPA); *City of Richfield v. Fed. Aviation Admin.*, 152 F.3d 905, 907 (8th Cir. 1998) (same); *Sierra Club v. Bosworth*, 428 F. Supp.2d 942, 960 (D. Minn. 2006) (same).

197. MINN. STAT. § 116D.04, subdiv. 2a (2008). The EQB rules implementing

reduce the environmental effects of a project or a project alternative, mitigation measures are often identified only after a project and its alternatives are defined. The comparative analysis of a project with project alternatives facilitates the “consideration of the need for mitigation measures,”¹⁹⁸ which the EIS may then identify or “suggest” as “measures which could be helpful in mitigating any adverse environmental impact caused by the action.”¹⁹⁹

In certain respects, the proposed amendment does not appear to require more information regarding a greenhouse gas analysis than that requested in the MPCA guidance for developing carbon footprints. For example, the MPCA carbon footprint guidance requests an analysis of “indirect emissions” of the six most common greenhouse gases from a project’s “consumption of purchased electricity and steam.”²⁰⁰ Both the MEPA guidance and the proposed amendment, therefore, envision an analysis of the greenhouse gases emitted to provide a proposed project with power. However, in contrast to the MPCA carbon footprint guidance, the proposed amendment broadly defines “greenhouse gases” to include not just the six most common greenhouse gases, but also “any other gases that contribute to global warming from anthropogenic sources.”²⁰¹ Such open-ended language could require MEPA environmental review to consider the emissions of dozens of compounds, including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), chlorocarbons, bromocarbons, hydrofluoroethers (HFEs), and perfluoropolyethers (PFPEs).²⁰² The

MEPA define “mitigation” as possible measures designed to

- A. avoid[] impacts altogether by not undertaking a certain project or parts of a project;
- B. minimiz[e] impacts by limiting the degree of magnitude of a project;
- C. rectify[] impacts by repairing, rehabilitating, or restoring the affected environment;
- D. reduc[e] or eliminat[e] impacts over time by preservation and maintenance operations
- E. during the life of the project;
- F. compensat[e] for impacts by replacing or providing substitute resources or environments; or reduc[e] or avoid[] impacts by implementation of pollution prevention measures.

MINN. R. 4410.0200, subpart 51 (2009).

198. MINN. R. 4410.2300(H) (2009).

199. *Coon Creek Watershed Dist. v. Minn. Env'tl. Quality Bd.*, 315 N.W.2d 604, 605–06 (Minn. 1982) (citations omitted).

200. MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 3.

201. *See supra* note 189.

202. MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 2.

language also invites litigation regarding whether the emission of a specific compound contributes to global warming. A more rational approach would be to define “greenhouse gases” as the six most common compounds—those upon which the MPCA carbon footprint guidance focuses. Such a definition would not prevent an RGU from analyzing a project’s emissions of all greenhouse gases, but would ensure a review of those compounds likely to be of greatest concern while limiting the prospect of needless litigation.

IV. THE FUTURE OF CLIMATE CHANGE ANALYSIS UNDER MEPA

A. *Should the Statute Be Amended To Require a Greenhouse Gas Analysis?*

According to the district court in *Minnesota Steel*, MEPA as currently drafted is inadequate to evaluate the impact of greenhouse gas emissions from a project and to assess how a changing climate may affect a project.²⁰³ At least one commentator agrees.²⁰⁴ However, amending the statute to require an evaluation of greenhouse gas emissions and climate change impacts is unnecessary given the *Minnesota Steel* court of appeals opinion, the requirement in the EAW form to discuss greenhouse gas emissions, and the MPCA carbon footprint guidance.

MEPA requires that an EIS include a thorough discussion of all potentially significant direct, indirect, or cumulative environmental effects from a proposed project.²⁰⁵ An EAW also must assess the environmental impacts associated with a proposed project that “may have the potential for significant environmental effects.”²⁰⁶ Because MEPA and the EQB rules implementing the statute require an analysis of direct, indirect, and cumulative effects, neither the statute nor the rules specify environmental review documents must include an analysis of any particular air pollutant.

There is no need to amend MEPA to single out greenhouse gases as a type of air pollutant emission that environmental review documents must evaluate. Without determining that MEPA requires an analysis of the environmental effects associated with a project’s greenhouse gas emissions, the court of appeals in *Minnesota Steel*

203. See *supra* Part III.A.2.

204. See Reuther, *supra* note 5, at 10665; see also *supra* Part II.A.3.

205. MINN. R. 4410.2300(H) (2009).

206. MINN. R. 4410.1000, subpart 1 (2009).

implied such emissions are an environmental effect under the statute.²⁰⁷ Similarly, the EAW form requires an evaluation of the impact of all stationary-source air emissions, including greenhouse gases.²⁰⁸ The MPCA published its carbon footprint guidance to ensure, at least for projects for which the agency is the RGU, that an EAW will quantify greenhouse gas emissions as the EAW form requests.²⁰⁹ Although the MPCA states the carbon footprint guidance applies only to EAWs where the MPCA is the RGU and where a proposed project will require a stationary source air emissions permit, the guidance is being applied more broadly.²¹⁰ If the emission of greenhouse gases from a proposed project is an environmental effect, as the *Minnesota Steel* court of appeals opinion, the EAW form, and the MPCA carbon footprint guidance appear to confirm, there is no need to amend MEPA or the EQB rules implementing the statute to require an analysis of greenhouse gas emissions associated with a proposed project. MEPA as currently drafted does not require a review of any specific air pollutant—including toxic air pollutants such as lead and mercury—but EAWs and EISs routinely review the impact of such emissions. Similarly, EAWs and EISs are reviewing the impact of greenhouse gas emissions even though the express language of MEPA does not mention greenhouse gases.²¹¹

Although amending MEPA to require a discussion of climate change impacts is unnecessary, additional guidance from EQB would be useful. MPCA's carbon footprint guidance should be the point of departure for analyzing a proposed project's climate change effects under MEPA, and it appears that RGUs other than the MPCA are relying on the guidance. Nevertheless, the EQB may wish to develop a general guidance discussing the manner in which RGUs other than the MPCA should address the issue of climate change. Even if the EQB does nothing more than suggest that all RGUs may use the MPCA carbon footprint guidance as a reference in developing climate change information when preparing an EAW or an EIS, such guidance would be beneficial. Clarifying that RGUs other than the MPCA may rely upon the MPCA carbon footprint guidance would

207. See *supra* note 152 and accompanying text.

208. See *supra* note 169 and accompanying text.

209. See *supra* notes 168–70 and accompanying text.

210. See *supra* notes 181–85 and accompanying text.

211. See *supra* Part III.A.1 (discussing greenhouse gas analysis in the Minnesota Steel final EIS); Part III.B (discussing greenhouse gas analysis in the *NorthMet Project Draft EIS*).

assist project proposers and RGUs struggling with the climate change issue. Such general EQB guidance may also forestall legal challenges under MEPA alleging that an RGU's use, or failure to use, the MPCA carbon footprint guidance is arbitrary, capricious, and renders an environmental review document inadequate.

B. Strategies for Project Proposers and RGUs

Many project proposers and RGUs are in the midst of determining how to develop environmental review documents under MEPA that adequately address the issue of climate change and greenhouse gas emissions. There are relatively few precedents as a guide. Certain themes, however, are emerging.

Project proposers and RGUs should evaluate greenhouse gas emissions in MEPA environmental review documents. There are legal arguments that such emissions, because they are currently unregulated, need not be the subject of environmental review.²¹² Federal courts have generally rejected these arguments under NEPA.²¹³ Although the federal decisions may be distinguishable, it seems prudent for RGUs to address greenhouse gas emissions under MEPA

212. See, e.g., *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 770 (2004) (federal agency with "limited statutory authority" and "no ability to prevent" an environmental effect need not consider that effect in conducting NEPA environmental review); *Ctr. for Biological Diversity v. Dep't of Housing and Urban Dev.*, 541 F. Supp. 2d 1091, 1100-01 (D. Ariz. 2008) (holding that a federal agency without governing statutes and regulations providing the discretion to consider certain environmental effects need not consider those effects under NEPA); *Audubon Naturalist Soc'y v. Dep't of Transp.*, 524 F. Supp. 2d 642, 708 (D. Md. 2007) (holding that a federal agency need not consider greenhouse gas emissions under NEPA because "no national regulatory thresholds for greenhouse gas emissions or concentrations have been established through law or regulation.").

213. See, e.g., *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1213 (9th Cir. 2008) (rejecting the argument that the *Public Citizen* decision stands for the proposition that an agency need not evaluate greenhouse gas emissions under NEPA); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 548-50, 556 (8th Cir. 2003) (remanding NEPA environmental review document for failure to consider air emissions, including carbon dioxide emissions from power plants); *Border Power Plant Working Group v. Dep't of Energy*, 260 F. Supp. 2d 997, 1026-29 (S.D. Cal. 2003) (NEPA environmental review document for construction of transmission lines to carry electricity from power plants in Mexico to users in southern California was inadequate because it failed to consider carbon dioxide emissions from the Mexican power plants); see also *supra* note 39 (discussing the CEQ cumulative impacts guidance that suggests a possible geographic area for analysis of the cumulative effects on air quality is the "global atmosphere" because air emissions travel substantial distances).

in light of the *Minnesota Steel* decision, the EAW form, and the MPCA carbon footprint guidance.²¹⁴

Assuming a project proposer or RGU determines it is appropriate to address greenhouse gas emissions in MEPA environmental review documents, the next issue is the nature of the evaluation.²¹⁵ Because protocols differ,²¹⁶ project proposers and RGUs may wish to begin by referring to the MPCA carbon footprint guidance. If an RGU does not consider the MPCA guidance, parties challenging environmental review documents under MEPA are likely to argue that the documents are inadequate. RGUs should evaluate the direct emissions of the six greenhouse gases to be reported under the MPCA carbon footprint guidance.²¹⁷ Such emissions include those from a proposed project's stacks, fugitive greenhouse gas emissions (such as methane escaping from oil and gas wells, landfills, or wastewater treatment plants), and impacts on carbon "sinks" — natural carbon sequestration areas such as forests, agricultural soils, and wetlands.²¹⁸ RGUs should also evaluate foreseeable indirect emissions, such as greenhouse gases emitted from purchased electricity.²¹⁹ Because calculation of carbon

214. See *supra* Part IV.A.

215. See Gerrard, *supra* note 2, at 23–24 (discussing what to analyze and key questions involving the analysis). In late February 2010, the CEQ published a long-awaited draft NEPA guidance document entitled "Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," and announced in the Federal Register that the draft was available for public comment. 75 Fed. Reg. 8046 (Feb. 23, 2010). The public comment period on the draft closes on May 24, 2010. *Id.* According to the CEQ, the draft guidance "explains how Federal agencies should analyze the environmental impacts of greenhouse gas emissions and climate change when they describe the environmental impacts of a proposed action under NEPA" *Id.* The draft provides "practical tools for [federal] agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent emissions from the proposed action to trigger consideration of a quantitative analysis" and offers "suggestions to [federal] agencies on how to assess the effects of climate change on the proposed action, and, in turn, on the design of [federal] agency actions." *Id.* Although the guidance is a draft and even if final would apply only to federal environmental review under NEPA, RGUs may nonetheless wish to review the draft CEQ guidance for informational purposes.

216. See Gerrard, *supra* note 2, at 23.

217. See *supra* note 168 and accompanying text.

218. See MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 7 (discussing the removal of carbon dioxide from the atmosphere); see also Gerrard, *supra* note 2, at 23–24 (discussing which greenhouse gas emissions to consider in an environmental review analysis).

219. MPCA CARBON FOOTPRINT GUIDANCE, *supra* note 168, at 3; see also Gerrard, *supra* note 2, at 24 (recommending an analysis of greenhouse gas emissions from purchased electricity).

dioxide and other greenhouse gas emissions from electricity generation varies from region to region based upon fuel use, type of facility, and other factors, RGUs may wish to rely upon the emission factors for commercial fuels set forth in the MPCA carbon footprint guidance.²²⁰ In addition, although not specifically required by the MPCA guidance, RGUs may wish to evaluate transportation impacts, including greenhouse gases emitted by transportation of raw materials and from induced trips of employees and vendors.²²¹

RGUs may also wish to consider the greenhouse gas emissions from construction of a proposed project. Such discussion, however, need not include a life cycle analysis of construction materials. Discussing greenhouse gas emissions from the manufacture of the construction materials employed in building a proposed project is well beyond the scope of the MPCA carbon footprint guidance and is too attenuated an impact to evaluate under MEPA.²²² RGUs should establish a plausible termination point for the analysis of greenhouse gas emissions associated with project construction and support that decision with substantial evidence in the administrative record for the environmental review document.

In addition, RGUs should be aware of challenges to environmental review documents based not upon a failure to analyze the effects of a project's greenhouse gas emissions on global climate change, but upon how a changing climate will affect the environment and the proposed project.²²³ The MCEA, by urging that MEPA requires the

220. MPCA, *Carbon Footprint Guidance*, *supra* note 168, at 5–7.

221. Emissions from induced trips may be difficult to assess. As a practical matter, persons that may not drive to a facility if it is never built will not simply stay at home, but may drive somewhere else instead. Under the circumstances, accounting for true net greenhouse gas emissions from transportation trips associated with a proposed project is a challenge. *See* Gerrard, *supra* note 2, at 24 (noting the difficulty in determining true net greenhouse gas emissions from induced trips).

222. *See, e.g.,* Metro. Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 774 (1983) (holding that psychological problems such as anxiety and fear potentially brought about by nuclear power are “too remote from the physical environment” and “too attenuated” to be considered under NEPA); San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm’n, 449 F.3d 1016, 1028 (9th Cir. 2006) (holding that under NEPA, a federal agency need not consider possibility of terrorist attack on a nuclear waste storage facility because it is too far removed from the natural and expected consequences of the agency action to approve the facility); *see also* Gerrard, *supra* note 2, at 24 (noting the difficulty in establishing the scope of the greenhouse gas emissions analysis associated with construction impacts).

223. *See* Pac. Coast Fed’n of Fishermen’s Ass’ns v. Gutierrez, 606 F. Supp. 2d 1122, 1183–84 (E.D. Cal. 2008) (holding that a federal agency’s biological opinion for a proposed water diversion project under the Endangered Species Act was inadequate

DNR to modify its environmental models to reflect climate change, advanced such an argument in the *Minnesota Steel* case.²²⁴ The DNR successfully addressed the MCEA's challenge to environmental models by complying with the EQB rule allowing an EIS to discuss information that is incomplete or unavailable.²²⁵ That rule, however, includes very specific prerequisites²²⁶ and an RGU must take care to develop information that will satisfy the rule's requirements.

V. CONCLUSION

The Minnesota Legislature need not amend MEPA to require a discussion of climate change in environmental review documents prepared under the statute. MEPA currently requires a thorough evaluation of direct, indirect, and cumulative environmental effects. As the *Minnesota Steel* court of appeals opinion, the EAW form, and the MPCA carbon footprint guidance establish, emission of greenhouse gases from a proposed project is an environmental effect.²²⁷ MEPA as currently drafted requires an analysis of such effects.²²⁸ Although the statute need not be amended, general guidance from the EQB suggesting that all RGUs may rely upon the MPCA carbon footprint guidance, where appropriate, would provide needed clarity.

Fundamentally, a climate change discussion in MEPA environmental review documents should include detailed analysis rather than conclusory statements. MEPA requires the evaluation of environmental impacts in a manner "commensurate with the importance of the impact."²²⁹ Climate change is perhaps the single most important

because the agency failed to discuss "readily available scientific data" regarding the "potential effects of global climate change on the hydrology of the Project area river systems"); *Natural Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 368 (E.D. Cal. 2007) (holding that a federal agency's biological opinion for a proposed water diversion project under the Endangered Species Act was inadequate because it failed to discuss specific studies and data plaintiffs submitted in the administrative record demonstrating, as the agency acknowledged, that climate change in California would adversely affect the project's water storage strategies).

224. *See supra* Part III.B.

225. *Id.*

226. The EQB rule requires RGUs to: (a) state why information is unavailable; (b) explain the relevance of the unavailable information; (c) briefly summarize existing credible scientific evidence; and (d) evaluate the impacts of the project using generally accepted theoretical approaches or research methods. MINN. R. 4410.2500 (2009).

227. *See supra* Parts III.A.3 & III.B

228. *See* MINN. R. 4410.2300(H) (2009); *see also supra* Part II.A.

229. MINN. R. 4410.2300(H) (2009).

2010]

GREENHOUSE GAS EMISSIONS

1109

environmental issue facing this nation. A lengthy discussion of climate change is not necessarily a prerequisite to adequacy under MEPA, but a perfunctory greenhouse gas analysis in an EAW or EIS is unlikely to be commensurate with the importance of a proposed project's possible effects on climate change and the effects of a changing climate on the project.