FACTORS FOR DETERMINING VALIDITY OF EVIDENCE IN CLEAN AIR ACT LITIGATION

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I. INTRODUCTION

This article discusses the admissibility of scientific evidence proffered during environmental compliance litigation. Specifically, it addresses the question of how a federal district court handling such litigation can develop a rationale for evaluating that evidence for reliability under Federal Rule of Evidence 702. The major premise of this article is that the holding in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[1] requires the court to use an expanded version of the four factors listed in that case for determining the scientific validity of evidence. Further, in order to determine the evidentiary reliability of environmental compliance data, the court must identify and apply factors that test the scientific validity of both the technology that generates the compliance data and the methods used to analyze the data.

This article proposes a set of factors that support this determination because they:

1. have a basis in the scientific method;
2. follow *Daubert*'s requirement that they focus on the expert's reasoning rather than his conclusions[2]; and
3. require the court to make a clear distinction between what components of the evidence are based on science, and what are based on non-science policy.

The ideas presented in this article are developed within the context of the "Any Credible Evidence" Rule[3] ("ACE Rule" or "Rule") of USEPA's ("EPA" or "Agency") 1990 Clean Air Act Amendments ("CAAA" or "Amendments").[4] Both the Rule and its enabling statute[5] fail to completely define "any credible evidence". However, when *Daubert* factors are thoughtfully devised and applied

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1. 509 U.S. 579 (1993).
2. *See id.* at 594-95.
3. Credible Evidence Revisions, 40 C.F.R. pts. 51, 52, 60, 61 (1999), 62 Fed. Reg. 8328 (1997).
4. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (codified as amended at CAA §§ 101-618, 42 U.S.C. §§ 7401-7671q (1994)).
5. *See* 42 U.S.C. § 7413(a) (1994).

to air emissions data to determine their reliability, a sharper definition of "any credible evidence" emerges.

Part II briefly discusses the ACE Rule, states why it is of concern to industry, explores the current understanding of what evidence the EPA expects the Rule to include, and explains why the minimal guidance the EPA has given requires the use of *Daubert* factors in evaluating this evidence. Part III turns to the question of how scientific, engineering, and technical evidence should be evaluated for reliability according to *Daubert*. The discussion considers the two major cases since *Daubert* that address reliability: *General Electric Co. v. Joiner*[6] and *Kumho Tire Co., Ltd., v. Carmichael*.[7] Part IV then examines how the courts can develop *Daubert* factors appropriate to ACE Rule evidence. The process of developing these factors begins with "guidepost" criteria that have been identified as demonstrating scientific validity[8] when applied to the most basic scientific endeavor: the development and testing of a hypothesis. Part V familiarizes the reader with Method 9, a standard emissions method. Part VI applies a representative selection of the new *Daubert* factors devised in Part IV to Method 9 to illustrate their use in determining validity and reliability.

In conclusion, the guidepost criteria are shown to be the logical source of appropriate *Daubert* factors, which the court can apply to assess the validity of data-generating technology and data-interpreting methods. In this specific instance, the factors are applied to an air emissions monitoring technology. However, they could be applied to technologies and methods used for monitoring and evaluating environmental compliance data from any source.

II. THE ACE RULE AND THE NEED FOR *DAUBERT* FACTORS

The Clean Air Act Amendments expand potential enforcement liability of major emissions sources, in part because the Act states that "any credible evidence" may be used in enforcement actions. Although the EPA does not define "any credible evidence", the Agency has indicated it must be based on scientific principles and is otherwise only limited by the Federal Rules of Evidence. "Any

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6. 522 U.S. 136 (1997).

7. 526 U.S. 137 (1999).

8. *See* Bert Black et al., *Science and the Law in the Wake of* Daubert*: A New Search for Scientific Knowledge*, 72 TEX. L. REV. 715, 782-85 (1994) [hereinafter Black].

credible evidence" is therefore subject to an analysis for scientific validity under *Daubert*.

A. Major Stationary Sources and Expanded Compliance Under the CAAA

The enactment of the Clean Air Act Amendments in 1990 critically expanded the compliance obligations and enforcement exposure of major stationary sources ("major sources").[9]

Prior to the Amendments, major sources were not required to obtain permits for their emissions or report their own violations. Although the EPA required them to maintain continuous compliance with emissions standards, the Agency monitoring was minimal[10] and monitoring practices were extremely favorable to industry. Facilities were notified in advance of Agency inspections and could fine-tune their emissions control equipment beforehand.[11] In essence, a facility could meet Agency requirements by showing it had the ability to be in compliance, rather than by actual demonstration of day-to-day compliance.[12] Lastly, citizen plaintiff groups, the regulated community, and the EPA were limited to using the EPA's "reference test methods" to demonstrate compliance or noncompliance.[13] The reference test methods are forty methods premised on well-established scientific principles[14] and documented by a brief bibliography. These methods were adopted and published by the EPA over the twenty years prior to the CAAA and are still available for industry, Agency, or citizen use.[15]

Major sources are now subjected to two significantly demanding programs: the Title V permitting program[16] and the Compliance Assurance Monitoring Rule, or "CAM" Rule.[17] Both programs

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9. Major stationary sources are facilities that have the potential to release more than one hundred tons of regulated emissions annually. Examples include petroleum refineries, electric power plants, steel mills, and other large factories. *See* U.S. GENERAL ACCOUNTING OFFICE, AIR POLLUTION: IMPROVEMENTS NEEDED IN DETECTING AND PREVENTING VIOLATIONS 8-9 (GAO No. RCED-90-155) (Sept. 1990).

10. *See* Credible Evidence Revisions, preamble, 62 Fed. Reg. 8314, 8315 (1997).

11. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9, at 21.

12. *See id*.

13. *See* United States v. Kaiser Steel, 1984 WL 186690, 186694 (C.D. Cal. 1984).

14. Although it may not necessarily be true that these principles have been applied correctly in the design of a given test method itself.

15. *See* Standards of Performance for New Stationary Sources, 40 C.F.R. § 60, app. A. (1999).

16. The Title V operating permit program was codified at subchapter V of the CAA, 42 U.S.C. §§ 7661-7661f, and was added to the CAA as part of the Clean Air Act Amendments, Pub. L. No. 101-549, Title V, 104 Stat. 2399 (1990).

17. Compliance Assurance Monitoring, 40 C.F.R. pts. 64, 70, 71 (1999).

require major sources to generate, retain, and report massive quantities of monitoring data to demonstrate continuous compliance.[18] These programs also create concern for major source operators that their enforcement liability has been enormously expanded, not only with respect to the EPA and its state designates, but also under the citizen suit provisions of the Clean Air Act.[19]

Another feature of the 1990 Amendments, the Credible Evidence Revisions,[20] amplifies these concerns. Generally referred to as the "Any Credible Evidence" Rule, it allows the use of both reference test method data and "comparable non-reference test data" in proving or disproving CAAA violations in enforcement actions.[21] Furthermore, any data developed by facilities under the CAM Rule or Title V may be used in judicial enforcement actions pursuant to the ACE Rule.[22] To date, industry efforts to challenge the rule have been unsuccessful,[23] and the regulated community remains stymied by one of the rule's most frustrating features: its failure to define exactly what "any credible evidence" means in the context of Clean Air Act enforcement.

B. The ACE Rule and Why Daubert *Has a Bearing on its Interpretation*

The ACE Rule is of concern as much for what it does not say as for what it does say. It states that non-reference test data (as opposed to data from reference test methods) can be used for establishing the facility compliance certifications required by the CAM Rule and the Title V permitting program, as well as enforcement actions.[24] The EPA has included a requirement that a given set of non-reference test data "relate" to the underlying air toxics standard it measures, and that it be "comparable" to the reference test methods contained in that standard.[25] Clearly, the EPA intends to secure the status of the reference test methods as "benchmarks"

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18. *See* 40 C.F.R. §§ 64.3, 64.4 (1999).

19. *See* Edward B. Sears, *The "Any Credible Evidence" Rule: Is EPA Really Holding All the Cards?*, 4 ENVTL. LAW. 157, 161-62 (1997).

20. 62 Fed. Reg. 8314 (1997) (codified at 40 C.F.R. pts. 51, 52, 60, 61 (1999)).

21. *See* Credible Evidence Revisions, 62 Fed. Reg. 8314, 8316 (1997).

22. *See* Compliance Assurance Monitoring, preamble, 62 Fed. Reg. 54,900, 54,907 (1997).

23. *See* Clean Air Implementation Project v. EPA, 150 F.3d 1200, 1208 (D.C. Cir. 1998). (holding that the issues concerning the impact of the credible evidence rule were not ripe for review).

24. *See* Credible Evidence Revisions, preamble, 62 Fed. Reg. 8314, 8314 (1997).

25. *See id.* at 8319.

for non-reference test methods.[26] However, the Agency gives no guidance on what "comparable" means, how "comparability" or "benchmarking" will be determined, nor does the Rule identify any form of evidence as presumptively credible, stating, "[t]his regulation also does not designate any particular data as probative of a violation of an emissions standard."[27]

However, the Agency is fairly clear about two criteria for credible evidence. First, whether the data is derived from either reference test methods or non-reference test methods, the implication is that it must be based on scientific technology. With respect to reference test data, it has been noted that the methods are based on well-established scientific principles.[28] As to non-reference test data, the EPA states that it can include "engineering calculations, indirect estimates of emissions, and direct measurement of emissions."[29] For example, the EPA identifies "continuous emissions monitoring (CEM)[30] data . . . and air flow rate of a regenerative thermal oxidizer" as "generally" providing "accurate data" with respect to determining compliance.[31] Further, because the data from the non-reference methods is derived from applied science (engineering), there is nothing novel about the scientific methodology that underlies the technology. Hence, underlying both reference and non-reference methods are well-established principles whose validity does not require examination.

What may be more open to question is: (1) whether the underlying science was correctly applied in designing the test method; and (2) even if the application was correct, whether the resulting data was correctly interpreted. These two questions bear on the evidentiary reliability of the data and are subject to the analysis proposed in Part IV.

The EPA establishes its second criterion for credible evidence more explicitly: the Agency contends that only the Federal Rules of Evidence limit what can be used to prove a violation.[32] In taking this position, the EPA confirms its intention to let in as much evidence as possible. The EPA's position is also consistent with the "relaxed"

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26. *See id.* at 8320.
27. *Id.* at 8315.
28. *See supra* text accompanying notes 14-15.
29. Credible Evidence Revisions, preamble, 62 Fed. Reg. 8314, 8315 (1997).
30. A continuous emissions monitor (CEM) is an electromechanical device that measures emissions virtually continuously. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9, at 19.
31. Credible Evidence Revisions, 62 Fed. Reg. 8314, 8315 (1997).
32. *See id.* at 8317.

standard for admissibility of expert opinion testimony under the Federal Rule of Evidence 702.[33] But the EPA appears not to have noted a direct consequence. Because the data is subject to the Federal Rules of Evidence, it is subject to an analysis for scientific validity under *Daubert*. As will be subsequently shown, a thoughtful *Daubert* analysis is likely not only to make the standard for admissibility less relaxed, it may considerably sharpen the definition of credible evidence.

III. THE *DAUBERT* FACTORS FOR DETERMINING VALIDITY AND RELIABILITY

The *Daubert* Court invited subsequent courts to develop factors for evaluating scientific evidence, beyond the four it suggested. Nine criteria have since been identified that support development of such factors on the basis of objective scientific validity. Since *Daubert*, Supreme Court rulings have favored *Daubert* factors for engineering and technical testimony – hence, a *Daubert* analysis is applicable to environmental data. While the Court has not explicitly required that these factors be based on objective premises of scientific validity, these post-*Daubert* rulings implicitly require these premises. Further, objective criteria of scientific validity are necessary for a court to frsme factors to assess environmental testimony in general and air emissions testimony in particular.

A. Daubert *and Scientific Validity*

In brief, *Daubert* holds that FRE 702 supercedes the *Frye* "general acceptance" rule.[34] *Daubert* states that in evaluating expert testimony for admissibility under FRE 702, a court must first evaluate it for evidentiary reliability.[35] The court is obliged to undertake its own analysis[36] - it cannot merely use "surrogate" factors such as "general acceptance" by an outside community of experts, as *Frye* allowed.

Daubert suggested four factors for evaluating scientific evidence:

1. Whether the scientific knowledge upon which the evidence rests can be subjected to testing which may refute it;

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33. *See Daubert*, 509 U.S. at 588 (citing Beech Aircraft Corp. v. Rainey, 488 U.S. 153, 169 (1988)).

34. *See Daubert*, 509 U.S. at 589.

35. *See id.* at 590.

36. Such analysis is typically done in a FED. R. EVID. § 104(a) hearing. *See id.* at 592-93.

2. Whether it has been subject to peer review and publication;
3. If it is a scientific technique, its "known or potential rate of error;" and
4. "General acceptance" by the "relevant scientific community."[37] The Court allowed this factor in determining if evidence is valid, but did not give it any special weight.

The *Daubert* Court only suggested the four factors as possible guidelines for determining reliability of scientific evidence.[38] The Court regarded this list as non-exclusive and invited subsequent courts to develop other factors as they deemed appropriate to the evidence at hand.[39] The Court's objective in developing factors to assess the reliability of scientific evidence is to help assess the scientific validity of the data.[40] Standing alone, these four factors lack sufficient detail or content to support this goal.

B. Efforts to Ground the Daubert *Factors in Criteria for Scientific Validity*

An attempt to provide a comprehensive framework for courts to use in managing science-based litigation came with the publication of the Federal Judicial Center's *Reference Manual on Scientific Evidence* in 1994 (*FJC Manual*).[41] However, the *FJC Manual* does not suggest how courts can develop factors for assessing the validity of scientific evidence.

The *FJC Manual* was followed in 1997 by *Expert Evidence: A Practitioner's Guide to Law, Science, and the FJC Manual* (*Expert Evidence*).[42] In its analysis of the law of expert testimony, *Expert Evidence* identifies nine criteria for assessing scientific validity of purportedly scientific expert testimony.[43]

The nine criteria at first appear limiting, largely because they are defined abstractly and applied to assessing a scientific hypothesis. However, as noted by their authors, the criteria are not to be used as

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37. *Daubert*, 509 U.S. at 593-94.
38. *See id.*
39. *See id.* at 593.
40. *See id.* at 594-95.
41. FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (Joe S. Cecil et al. eds.,1994) [hereinafter FJC Manual].
42. PRODUCT LIABILITY ADVISORY COUNCIL FOUNDATION, EXPERT EVIDENCE: A PRACTICIONER'S GUIDE TO LAW, SCIENCE, AND THE FJC MANUAL (Bert Black & Patrick W. Lee, eds., 1997) [hereinafter EXPERT EVIDENCE].
43. *See id.* at 44-46; *see also* Black, *supra* note 8, at 782 (citing identical criteria). The latter source will primarily be used for the criteria unless otherwise noted.

a checklist, but only as guideposts.[44] Therefore, the criteria should be understood to be very de-limiting because they provide a framework that supports an objective examination of evidence, one that does not rely on "surrogate factors"[45] that allows a court to evade its responsibility to make the analysis. By avoiding the use of surrogate factors, a court is forced to satisfy itself that every step of the expert's reasoning process is objectively sound.

In Part IV, this paper examines these guideposts in detail and discusses how they can be used to design useful factors specific to assessing environmental compliance data in general and air emissions data in particular. But before doing this, it is useful to consider several preliminary issues. The first is whether present law favors the aggressive development of *Daubert* factors, as suggested here. The second is whether present law favors subjecting engineering and other technical testimony (as opposed to purely scientific testimony) to *Daubert* analysis, as this paper also contends. The third is whether the *Daubert* analysis of engineering and technical testimony should be pinned exclusively to factors based on scientific validity. Lastly, with respect to engineering and technical testimony for environmental compliance, questions arise as to whether there has been any recognition of a need for *Daubert* factors in this context, and why such factors should be specially tailored for this type of evidence.

C. The Impact of G.E. v. Joiner *and* Kumho Tire *on* Daubert

In *General Electric v. Joiner*[46] and *Kumho Tire Co., Ltd. v. Carmichael*[47], the Supreme Court gave federal district courts freedom to develop *Daubert* factors as they see fit to determine evidentiary reliability. *Kumho Tire*'s holding clearly states that a district court must subject engineering and technical testimony to a *Daubert* aanlysis. However, while *Kumho Tire*'s holding expanded the factors for assessing such testimony to any which qualify as "reasonable reliability criteria", the Court's opinion failed to define this standard or to require that these criteria be grounded in an objective basis of scientific validity.

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44. *See* Black, *supra* note 8, at 754.

45. A "surrogate factor" may be defined as any factor that does not directly address the expert's reasoning process. *See id.* at 732-33.

46. 522 U.S. 136 (1997).

47. 526 U.S. 137 (1999).

1. G.E. v. Joiner *and* Kumho Tire *Favor Aggressive Development of* Daubert *Factors*

In *General Electric Co. v. Joiner*, the Supreme Court affirmed *Daubert's* holding that under FRE 702, the trial judge must ensure that any scientific testimony admitted is not only relevant, but reliable.[48] Specifically, *Joiner* addressed the reliability of medical evidence that purported to show a connection between the plaintiff's lung cancer and his prior exposure to PCBs, dioxins and furans.[49] The issue was whether the opinions of plaintiff Joiner's experts were sufficiently supported by the animal studies on which they purported to rely.[50] The Supreme Court held that the studies used by the experts were so dissimilar to the facts of Joiner's case that it was not an abuse of discretion for the trial court to have excluded them.[51]

The *Joiner* Court did not discuss what factors the trial court should use in determining reliability of scientific evidence, or what their relationship to scientific validity should be. However, in supporting abuse-of-discretion review, the *Joiner* Court endorsed giving the trial court great freedom in selecting *Daubert* factors to determine reliability.[52] The Supreme Court subsequently spoke more clearly to this point in *Kumho Tire Co., Ltd. v. Carmichael*.[53] Specifically citing *Joiner*, the *Kumho Tire* Court stated, "the law grants a district court the same broad latitude when it decides how to determine reliability as it enjoys in respect to its ultimate reliability determination."[54] Further, "whether *Daubert's* specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine."[55] First in *Joiner*, then more explicitly in *Kumho Tire*, the Court has given trial courts freedom to develop factors as it sees fit to determine reliability.

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48. *See Joiner*, 522 U.S. at 142.
49. *See id.* at 139-40.
50. *See id.* at 144.
51. *See id.* at 144-45.
52. *See id.* at 141-43.
53. 526 U.S. 137 (1999).
54. *Id.* at 142 (citing General Elec. Co. v. Joiner, 522 U.S. 136, 143 (1997)).
55. *Id.* at 153 (citing General Elec. Co. v. Joiner, 522 U.S. 136, 143 (1997)).

2. Engineering and Technical Testimony are Subject to Daubert *Analysis.*

The *Kumho Tire* Court clearly affirmed the use of *Daubert* factors for evaluating engineering and technical testimony. In *Kumho Tire*, the broad issue was "how *Daubert* applies to the testimony of engineers and other experts who are not scientists."[56] The *Kumho Tire* Court held that *Daubert's* general holding, which requires the trial judge to act as a gatekeeper in evaluating expert testimony for admissibility, applies to testimony based on "technical" and "other specialized" knowledge.[57] The *Kumho Tire* Court also concluded that in the case of engineering, technical, or other specialized knowledge, the "trial court may consider one or more of the specific factors that *Daubert* mentioned when doing so will help determine that testimony's reliability."[58]

Kumho Tire's holding makes it clear that a district court is legally required to subject engineering and technical testimony – hence environmental compliance testimony – to a *Daubert* analysis. However, the *Kumbo Tire* Court stressed that "as . . . stated in *Daubert*, the test of reliability is 'flexible', and *Daubert's* list of specific factors neither necessarily nor exclusively applies to all experts or in every case."[59] When the petitioners asked the *Kumho Tire* Court whether the trial judge might use the four factors cited in *Daubert* to determine the admissibility of an engineering expert's testimony, the Court replied that the trial court may use them, emphasizing that the Court's "emphasis on the word 'may' thus reflects *Daubert's* description of the Rule 702 inquiry as 'a flexible one.'"[60]

The narrow issue in *Kumho Tire* was the reasonableness (hence, reliability) of the expert witness's use of certain methods of obtaining and analyzing tire-wear data in order to draw an evidentiary conclusion.[61] The *Kumho Tire* Court held that the District Court was within its lawful discretion in excluding the evidence on the basis of its failure to satisfy either *Daubert's* factors or *any other set* of reasonable reliability criteria.[62] The *Kumho Tire* Court thus expands

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56. *Id.* at 141.
57. *See id.*
58. *Id.*
59. *Id.*
60. *Id.* at 150.
61. *See id.* at 153-54.
62. *See id.* at 158.

Daubert factors to any which qualify as "reasonable reliability criteria."

The outcome of the *Joiner* and *Kumho Tire* rulings is that while a district court has great discretion to develop *Daubert* factors for determining reliability, it need only meet an as yet undefined standard of reasonableness. With respect to engineering and technical, and hence environmental, evidence, there is no requirement that the factors have a basis in scientific validity.

D. Daubert *Factors for Engineering or Technical Testimony Should be Based on Scientific Validity*

Even though neither *Joiner* nor *Kumho Tire* confirm that *Daubert* factors for engineering and technical testimony should adhere to principles of scientific validity, there are good reasons to maintain this adherence. As the *Kumho Tire* Court notes, "[e]ngineering testimony rests upon scientific foundations, the reliability of which will be at issue in some cases."[63] This statement leads to two conclusions. First, the use of principles of scientific validity to devise *Daubert* factors for this engineering testimony is logically consistent with the relationship between engineering and applied science to pure science. This logical consistency justifies adherence to the use of principles of scientific validity. Second, it implicates *Daubert*'s requirement that the court focus on the expert's reasoning rather than his conclusions.[64] This, in turn, recalls the basic requirement the factors must address: objectivity. As will be shown in Part IV, the guideposts for scientific validity are the primary tools for maintaining objectivity in developing the factors. The *Kumho Tire* Court indirectly acknowledges this in its comment that the objective of *Daubert's* gatekeeping requirement is "to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."[65]

This comment seems to clarify what reasonable reliability criteria are with respect to engineering and technical testimony. Such criteria are *Daubert* factors that hold the expert to "the same level of intellectual rigor that characterizes the practice of an expert in the

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63. *Id.* at 150.
64. *See* 509 U.S. at 594-95.
65. 526 U.S. at 152.

relevant field."[66] Intellectual rigor necessarily demands objectivity; as a result, an engineering or technical expert is held to standards of scientific validity.

It is crucial to recognize the relationship of standards of validity to engineering and technical testimony in the wake of *Kumho Tire*. *Kumho Tire* appears to allow trial courts unlimited license to devise factors by giving them "discretion to choose among reasonable means."[67] *Kumho Tire* also secures *Daubert* analysis for "'other specialized' knowledge",[68] a term so open-ended that it may be used to justify virtually any kind of expert testimony. A court's recognition of the relationship between scientific validity and engineering and technical testimony thus becomes critical. Without it, a court risks losing the "gold standard" for securing the reliability of the expanded range of expert testimony it now must assess.

E. Daubert *Factors Tailored to Assessing Environmental Compliance Data*

This paper now responds to the question of why environmental compliance data should require their own *Daubert* factors.

Of the articles this writer reviewed for an understanding of *Daubert* factors, none were found that addressed how to devise factors for assessing environmental compliance data. Superficially, there appears to be nothing distinctive about environmental compliance data insofar as they are generated by conventional applied science. However, it can be argued that environmental compliance data requires application of factors that reflect an especially stringent level of objectivity. This is because the under lying standards that condition the choice of technology, and possibly the choice of method of data evaluation, are based not solely on science, but in part on policy decisions that have no scientific basis.[69] This is true in general and specifically with respect to CAAA emissions standards.[70] Thus, a court assessing the scientific validity of such information should be alert to the policy component that may bias it. This is not to argue that the policy component has no legitimacy; it is simply to stress that a court's decisions about the validity of evidence need to account for it. Without this precaution,

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66. *Id.*
67. *Id.* at 159 (Scalia, J., concurring).
68. *Id.* at 147-48.
69. *See* Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1616-17 (1995).
70. *See id.* at 1691-93.

any effort to determine evidentiary reliability is compromised. A court's goal should be to deal with the policy-based concerns of environmental litigation in a conscious and well-informed way. Designing and using *Daubert* factors that help identify policy based concerns is part of that process.

F. Daubert *Factors Tailored Specifically to Air Emissions Data*

With respect to air emissions data in particular, neither the ACE Rule nor its preamble recognizes that a *Daubert* analysis is a required part of CAAA federal court litigation. The closest the Rule approaches this is a brief comment in the preamble: "Of course, in judicial enforcement proceedings, what evidence is credible and admissible will be determined by the court taking into account how the evidence was gathered and the specifics of the emissions standard and any associated reference method."[71] The terms in this passage suggest reliability ("**how** the evidence was gathered". . . "**specifics** of the . . . standard . . . or method"). However, earlier in the preamble, the EPA notes, "[i]t should be emphasized that the determination that evidence or information is credible is merely a threshold determination that the evidence or information in question is technically relevant, and therefore, legally admissible in an enforcement action."[72] Certainly a determination of relevance is required under FRE 702. However, as *Daubert* teaches, determination of evidentiary reliability through an assessment of scientific validity is a court's initial task.[73]

Of all the literature reviewed on the ACE Rule, only one article recognizes this requirement,[74] and even this article did not acknowledge that the process of developing and applying *Daubert* factors for application to CAAA evidence will necessarily help define what "credible evidence" means. So although it appears to have been unrecognized, the question of what factors the court devises becomes quite crucial to the interpretation of the ACE Rule.

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71. Credible Evidence Revisions, preamble, 62 Fed. Reg. 8314, 8322-23 (1997).
72. *Id.* at 8317-18.
73. *See* 509 U.S. at 592-93.
74. *See* Peter Hsiao, American Law Institute-American Bar Association Continuing Legal Education, *New Developments and Trends in Clean Air Act Litigation and Enforcement*, SA85 ALI-ABA, 403, 422 (1996).

IV. *DAUBERT* FACTORS FOR ACE RULE OPINION TESTIMONY

This paper now explores what these *Daubert* factors should be and attempts to keep the focus on how the data was reached, not the data itself. This article will try, by analogy, to adhere to *Daubert*'s requirement that the analysis be based on the expert's reasoning process, not on his conclusions.[75] It also attempts to maintain objectivity as stringently as possible.

A. Relating the "Guideposts" to Air Emissions Technology and Measurement

The premise of this effort is that the validity of the process, which produces the data, guarantees the validity of the result. Hence, the factors must be applied to both the technology used for producing the data (sampling, monitoring, testing, etc.) and the methods used to assess it (calculations, statistical analysis, etc.) - i.e., the methods used for drawing the expert's conclusions or inferences. For convenience, throughout the rest of this paper the former category will be referred to as "technology" and the latter as "method." The goal is to identify factors that will determine whether both technology and method are applied in an objective way.

The point of departure for devising factors for validation is the "guideposts" alluded to earlier,[76] which Black, Ayala, and Saffran-Brinks suggest as indicators of the validity of a scientific hypothesis. It is reasonable to assume that these guideposts apply to the science that underlies emissions monitoring technologies and methods.[77] This section attempts, by analogy, to move from the validation of a hypothesis to the validation of applied science: the monitoring technologies and assessment methods. By making a logical extension from each guidepost, we can devise factors that help determine if the underlying science has been applied correctly. Just as *Daubert* was an attempt to eliminate "junk science" from the courtroom, the discussion below is an effort to find tools to eliminate "junk technology" and "junk methodology."

The nine guideposts are presented below; each is followed by a paraphrase of Black, Ayala, and Saffran-Brinks's explanatory commentary. Beneath each, in italics, are suggested factors -- the

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75. *See* 509 U.S. at 595.

76. *See supra* text accompanying note 8.

77. Gas physics, electromechanical theory, and statistical analysis are the kind of long-established "underlying science" referred to here.

factors that guidepost suggests for validating monitoring technology or assessment methods. Just as Black cautions that their guideposts should not be used as a checklist,[78] likewise the suggested factors developed here are non-exclusive and should not be taken as limiting. Doubtless more could be identified. But any suggested factor for evaluating CAA technologies and methods should meet three criteria: it should have a logical relationship to the validation process; it should relate to how the data is determined, not merely to the data itself; and it should be more than a mere surrogate (that is, it should not be a substitute for a court's own analysis of the technology and method that produce the data).

B. The "Guideposts" and the Factors They Support

1. Falsifiability of the hypothesis:[79]

A hypothesis is "falsifiable" if it can be subjected to a testing regime with the capacity to show the hypothesis is false, if that should be the case. Thus, the hypothesis must have a logical form that allows it to be subjected to empirical testing.[80] Along with testing, the *Daubert* Court listed falsifiability as its first factor.[81]

Suggested factors:

(a) In the case of a technology, has it been subjected to rigorous testing by someone with the pertinent expertise to test it objectively?

(b) In the case of a data assessment method, has it been demonstrated to be appropriate to the data by individuals with the pertinent expertise, who can recommend it objectively and independently?

2. Explanatory power of the hypothesis:[82]

A valid hypothesis explains and clarifies relationships between phenomena, not merely describes them.

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78. *See* Black, *supra* note 8, at 782.
79. *Id.* at 783.
80. *See id.*
81. *See* 509 U.S. at 593.
82. Black, *supra* note 8, at 783.

Suggested factor:

(a) Is there a logical relationship between the underlying theory and the technology or method that purportedly applies it? Valid scientific theory cannot be used to support invalid applications. A valid connection must be demonstrated between the theory and its application.

The hypothesis provides a plausible mechanism to explain the phenomenon in question.[83]

Suggested factor:

(b) Is the technology's mechanism consistent with the theory it is based on? (Example: continuous emissions monitors measure opacity using reflected beams of light, consistent with laws of physics and optics).

The hypothesis is predictive as well as descriptive;[84] this reflects the common sense observation that a simple and direct predictive explanation is the one most likely to be correct.[85]

Suggested factor:

(c) Can the technology or method used for one type of emissions parameter be successfully applied (with only reasonable modification) to use with another? (Example: can a given method of sampling/analyzing one airborne chemical be applied (with only reasonable modification) for use in sampling/analyzing another?)

3. The hypothesis must have logical consistency:[86]

The hypothesis cannot be self-contradictory; if so, it cannot be tested empirically.

Suggested factor:

(a) The technology or method has not been applied in such a way as to manipulate the data to demonstrate inconsistent or contradictory results.

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83. *See id.*
84. *See id.*
85. *See id.*
86. *Id.*

4. Scope of testing of the hypothesis:[87]

A "good" test for a hypothesis is one that yields useful information about the hypothesis and its limits.[88] The more "severe"[89] and the more "diverse"[90] the experiments are that fail to falsify the hypothesis, the more likely it is to be valid, and therefore reliable. The more varied and diverse the tests are, the more likely they are to shed new light on the hypothesis and its limits.[91]

Suggested factors:

(a) In the case of a monitoring technology, has it been subjected to testing that will duplicate the full range, and even push the outside limits, of the conditions under which it will be used? If such testing has been done, to what degree of reliability have the results been determined, and within what range of conditions?

(b) In the case of a data assessment method, have limits beyond which the method does not apply been identified?

5. Consistency of the hypothesis with accepted theories:[92]

Abandonment of a previously accepted theory "requires a clear alternative explanation and adequate empirical support."[93] Black, Ayala, and Saffran-Brinks suggest that this evokes the *Frye* test, but note that the *Daubert* Court did retain "acceptance" as a factor to be considered in assessing science.[94]

Suggested factor:

(a) If a facility abandons use of one technology or method for another, is its decision justifiable on grounds of improving accuracy in data generation and evaluation, or are other factors involved?

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87. *Id.*

88. *See id.* at 783-784.

89. "Severity refers to the likelihood that a test will have an outcome incompatible with a hypothesis if the hypothesis is false." *Id.* at 763.

90. "Diverse" refers to the variety of tests to which the hypothesis is subjected. *See id.* at 762.

91. *See id.*

92. *Id.* at 784.

93. *Id.*

94. *See id.*

6. Subsequent application and use of the hypothesis by the scientific community:[95]

The more consistent a theory is with accepted theories, the more likely it is to be accepted by the scientific community. This is actually similar to the *Frye* general acceptance test; and if misapplied, it would be a surrogate.

Suggested factors:

(a) Correctly applied, the notion of consistency supports healthy skepticism by a court. This suggests a corresponding factor for determining validity:
Does a record exist indicating why the EPA or the facility has adopted a given technology or method? Can adoption of the technology/method be justified solely on grounds of scientific accuracy and completeness of the data it will produce? If other factors were involved, what were they, and to what extent did they influence the decision?

7. Level of precision of the hypothetical statement:[96]

Precise hypothetical statements are easier to correlate and have more predictive power than broad statements.[97] They also are more amenable to severe and varied empirical testing.[98]

Suggested factors:

(a) Are points identified in the data generation (technology) and data evaluation (method) processes where error may be introduced? Have they been addressed?

(b) Is the technology's equipment maintained and calibrated with the appropriate procedures and frequency, and according to objective and independent standards?

(c) Is the sampling/measurement regime representative of the full range of operating conditions the facility experiences?

(d) If samples must undergo laboratory testing, are appropriate laboratory validation techniques in place?

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95. *Id.*
96. *Id.*
97. *See id.*
98. *See id.*

8. Post-hypothesis testing:[99]

An untested hypothesis is no more than mere speculation, regardless of how many phenomena it accounts for. If the hypothesis has not been subjected to adequate experimental testing, it cannot be shown to have any level of validity.

Suggested factors:

(a) This guidepost suggests that a court apply skepticism when a party introduces a novel technology or method, and that a court demand a rigorous demonstration that it is based on valid underlying science, applied in a valid way. The case of novel technology or method only strengthens the need for a court to use both Black, Ayala, and Saffran-Brinks's guideposts and the suggested factors for technology- and method-validation given here.

9. Degree to which the hypothesis has been subjected to peer review and publication:[100]

If a hypothesis and the experiments used to test it have not been subjected to peer review by individuals with appropriate expertise, the hypothesis should be viewed skeptically.[101]

The *Daubert* Court listed peer review as one of its factors.[102] However, it could easily be used by a court as a surrogate for its own examination of validity, and as such it resembles the *Frye* general acceptance test. With respect to a hypothesis, peer review serves as a prompt for skepticism. However, it should be looked at more flexibly in the context of applied science. *Expert Evidence* notes that in some situations, internal review procedures may be used instead of submitting work to a journal, and that in areas of applied science, peer review may not be appropriate.[103] For example, a report on a facility's internal audit of the efficiency of its pollution control devices could be scientifically valid but would not be published in a scientific journal. *Expert Evidence* further suggests that a court that deals with applied science "should be particularly attentive to factors like general acceptance, potential sources of error, and the plausibility of any assumptions. The expert's report should explain

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99. *Id.* at 785.
100. *Id.*
101. *See id.*
102. *See Daubert*, 509 U.S. at 593.
103. *See* EXPERT EVIDENCE, *supra* note 42, at 46.

the reasoning used to reach conclusions, and his reasoning should be appropriate."[104]

Suggested factors:

The suggestions given in the entry above are exactly what this paper attempts to identify, expand upon, and give content to in the context of environmental compliance. Two additional factors present themselves:

(a) In the context of environmental compliance, it is especially important for a court to examine the standard technologies or methods used, including any EPA standard technologies or methods.

(b) Whatever technology or method used, a court needs to determine if it has a purely scientific basis. As noted,[105] *the EPA's underlying standards frequently incorporate non-scientific, policy-based elements. Industry may also have incorporated non-science rationales into its technology or methods. In either case,* Daubert*'s requirement that scientific validation be applied to scientific evidence to establish evidentiary reliability demands this separation of policy and science.*

This paper adds a tenth guidepost to Black, Ayala, and Saffran-Brinks's list:

10. The hypothesis must be handled (that is, discussed, analyzed, and empirically tested) objectively at all stages in its validation

Although this is implicit in the nine guideposts, it is worth stating expressly because the validation process that *Daubert* demands is so contrary to the conventional approach of litigation. Litigation is by nature biased; validation requires objectivity.

Suggested factors:

(a) A court must vigilantly focus its analysis on determining the scientific validity of the technology and method in question. This means that each link in the chain of reasoning used to support the application of the technology or method has to sustain the assessment for validity.

(b) A court must identify any components of the technology or method (or their underlying standards) that are based on non-science policy.

(c) A court must be alert to unsupported assertions or projections by the expert who testifies on the technology or the method.

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104. *Id.* at 43.

105. *See supra* text accompanying notes 69-70.

(d) An expert testifying on the technology or method cannot deliberately ignore documents and figures that would properly deserve his attention and review.

(e) An expert cannot pick and choose selectively among purported facts, data or alternative technologies or methods without a valid reason.

A range of *Daubert* factors for ACE Rule opinion testimony now has been identified. The next step is to examine how effective the factors are for assessing the scientific validity of a technology or method. Part V of this paper examines a commonly used air emissions monitoring technology in detail. Part VI then illustrates the factors by applying a representative range of them to this monitoring technology.

V. AN EMISSIONS MONITORING TECHNOLOGY FOR *DAUBERT* ANALYSIS

This section describes the rationale for the selection of a specific air emissions monitoring technology for an analysis according to the factors discussed in Part IV.B. It then familiarizes the reader with the chosen technology's underlying principles and application in practice.

A. Selection of A Monitoring Technology

This section describes a selected standard technology for monitoring emissions and examines it in detail in preparation for applying the factors to it. The chosen technology is Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources ("Method 9").[106] Method 9 appears in two publications; a concise version appears in the *Code of Federal Regulations*[107] and the same version, with detailed quality assurance procedures, appears in Volume III of the EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems* ("*Quality Assurance Handbook*").[108]

Method 9 was chosen for several reasons. First, Method 9 is used specifically for determining compliance of major stationary

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106. Standards of Performance for New Stationary Sources, 40 C.F.R. pt. 60, app. A, Method 9 – Visual Determination of the Opacity of Emissions From Stationary Sources (1999) [hereinafter Method 9].

107. *See id.*

108. ENVIRONMENTAL MONITORING SYSTEMS LABORATORY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, EPA-600/4-77-027b, QUALITY ASSURANCE HANDBOOK FOR AIR POLLUTION MEASUREMENT SYSTEMS: VOLUME III. STATIONARY SOURCE SPECIFIC METHODS, ADDITION § 3.12 (1984) [hereinafter QUALITY ASSURANCE HANDBOOK].

sources.[109] Therefore, it is a potential source of evidence subject to the ACE Rule. Secondly, Method 9 is a designated reference method. As noted earlier, the ACE Rule requires that any non-reference test data be comparable to reference test method data.[110] Method 9 provides typical reference test data. Third, it has been in continuous use by the Agency and its designated state implementing authorities since the 1970s.[111] Decades of use indicate general acceptance of the method's validity. Fourth, while it applies scientific principles, Method 9 is not technically elaborate. Its simplicity demonstrates the factors very concretely. Finally, certain elements of Method 9 prompt skepticism that it is truly "scientific."[112] This aspect of Method 9 makes it an excellent candidate for examining how the factors can be used to evaluate the purported scientific validity of a technology.

B. Method 9: Underlying Principles

Method 9 is based on two underlying principles. The first is that there is a direct correlation between the density, or opacity, of visible emissions and the presence of non-visible emissions. The second is that this correlation can be mathematically – and therefore objectively – quantified in the form of percent opacity.

1. Emissions Plume Opacity

Major stationary sources commonly release both visible and non-visible emissions into the atmosphere. Emissions may be released from one or a few tall chimneys, as at a utility, or from numerous smaller stacks, as at a manufacturing facility. A familiar example is the "plume" from a coal-fired power plant, which is the visible portion of the plant's emissions due mainly to particulates that result from incomplete combustion.[113] The less efficient the combustion process, and/or the less effective the plant's emissions controls, the

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109. *See* Method 9, *supra* note 106, § 1.2.

110. *See supra* text accompanying notes 20-27.

111. *See* Method 9, *supra* note 106, § 4 (citing MELVIN I. WEISBURD, FIELD OPERATIONS AND ENFORCEMENT MANUAL FOR AIR, 4.1-4.36 (1972) (U.S. Environmental Protection Agency, Research Triangle Park, N.C., APTD-1100)).

112. *See infra* text accompanying notes 159-65.

113. Telephone Interview with Patrick Haines, Environmental Specialist II, Ohio Environmental Protection Agency, Division of Air Pollution Control Emissions Monitoring and Testing Unit (March 12, 1999). Mr. Haines organizes Ohio EPA's Method 9 training and certification program and is the person in Ohio EPA most familiar with the method.

more dense the plume appears.[114] Because combustion inefficiency and emissions controls ineffectiveness directly correlate with non-visible emissions, such as nitrogen oxides (NO_x) and sulfur dioxide (SO_2), plume density may be used as a general indicator of non-visible emissions.[115] This direct correlation has made plume density, or "opacity", a conventional measure of emissions compliance since the Clean Air Act's inception.[116]

Despite this correlation, the EPA and its state designates consider opacity readings insufficient to indicate specific levels of particulate or non-visible emissions. This is because opacity readings are influenced by numerous factors, including particle color, particle density, particle refractive index, and particle size distribution.[117] Hence, opacity readings are not used to determine violations of other emissions standards. Rather, percent opacity is an emissions standard in its own right, with which the facility must comply. For example, twenty percent opacity is a typical limit for emissions from an electric utility.[118]

2. Percent Opacity

More formally, plume opacity is defined as "the degree to which the transmission of light is reduced or the degree to which visibility of a background as viewed through the diameter of a plume is reduced."[119] In the context of optics physics, plume opacity may be reduced to mathematical terms: given that "I_0 is the incident light flux and I is the light flux leaving the plume along the same light path," then "opacity is dependent upon transmittance (I / I_0) through the plume."[120]

Opacity may then be defined in terms of "percent opacity":

$$\text{Percent opacity} = (1-I / I_0) \times 100.$$[121]

Percent opacity is thus the percent reduction in transmission of light, or percent reduction of visibility of the background, as viewed

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114. *See id.*
115. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9.
116. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.1.1.
117. *See id.*
118. *See* Interview with Patrick Haines, *supra* note 113.
119. QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.1.1.
120. *Id.*
121. *Id.*

through the diameter of the plume.[122] Method 9 is a procedure for determining percent plume opacity from a stationary source, using direct observation by a trained observer.[123]

C. Method 9: Application

The following discussion familiarizes the reader with how Method 9 is applied in the field. It describes the procedures for reading opacity, recording and reducing data, the EPA's training and certification procedure, and specifications for the equipment used in training certified observers. It also summarizes variables and sources of error inherent in the method, as well as levels of accuracy that can be achieved with it.

1. Procedure

An observer stands at a sufficient distance from the stack or chimney to have a clear view of the plume.[124] The recommended distance is between three stack heights, as though the height of the stack were laid end-to-end on the ground three times, and a quarter mile from the base of the stack.[125] The observer must stand with the sun behind him, and the sun must be within a sector of 140 degrees to the center of the observer's back.[126] Insofar as possible, the observer maintains a position that keeps his line of vision perpendicular to the plume's direction.[127]

If the plume is from a rectangular outlet, the observer must, consistent with the above requirements, keep his line of vision "approximately perpendicular to the longer axis of the outlet."[128] When more than one stack is involved, the "line of sight should not include more than one plume at a time."[129]

The observer takes his observations "at the point of greatest opacity" in the plume; however, he must not take it from a portion of the plume where water vapor is present.[130] Water vapor should be readily distinguishable to the trained observer.[131] The observer is

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122. *See id.*
123. *See* Method 9, *supra* note 106, Introduction.
124. *See* Method 9, *supra* note 106, § 2.1.
125. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.4.3.
126. *See* Method 9, *supra* note 106, § 2.1.
127. *See id.*
128. *Id.*
129. *Id.*
130. *See* Method 9, *supra* note 106, § 2.3.
131. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.4.4.8.

not permitted to look at the plume continuously, but instead must view it "momentarily at 15-second intervals."[132]

2. Recording and Reducing the Data

An observer is expected to be able to make opacity determinations to the nearest 5 percent and must note his observations at 15-second intervals on a record sheet.[133] Each "momentary observation" is considered to represent the average opacity of the plume over a 15-second period.[134]

An observer bases the record on "sets" of observations.[135] The observer may base the record on any number of sets of observations, but each set must be composed of a minimum of twenty-four consecutive observations made at 15-second intervals.[136] The sets may not overlap, but they do not need to be chronologically consecutive.[137]

The observer averages each set of twenty-four observations by summing the percent opacities of the twenty-four observations and dividing the sum by twenty-four.[138] The EPA provides a model record sheet[139] that accommodates ten averages, but neither the model form nor the language of Method 9 give any indication of what number of "averaged sets" is desirable.

3. Training and Certification

Method 9 requires an observer to be trained and certified to make emissions opacity readings according to its procedures.[140] To qualify for certification, a candidate views a run of fifty plumes emitted by a smoke generator.[141] Although all the runs within a given set of twenty-five are either all black or all white, their opacity is randomized.[142] The candidate is scored after a total run of fifty plumes.[143] A candidate who does not qualify may retest, but must

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132. *See* Method 9, *supra* note 106, § 2.3.
133. *See id.*
134. *See id.* § 2.5.
135. *See id.*
136. *See id.* §§ 2.4, 2.5.
137. *See id.* § 2.5.
138. *See id.*
139. *See id.* § 2.2.
140. *See id.* §§ 3.1-3.2.
141. *See id.* § 3.2.
142. *See id.*
143. *See id.*

view a complete run of fifty readings.[144] A candidate may receive training and/or preliminary runs of the smoke generator to familiarize themselves with gradations of opacity.[145]

A candidate is certified as a qualified observer when he is able to determine opacity readings in 5 percent increments for twenty-five different black plumes and twenty-five different white plumes. An observer's level of error may not exceed 15 percent opacity on any one reading, and his average level of error may not exceed 7.5 percent opacity in each category.[146] Certification is valid only for a period of six months; to retain certification, the observer must repeat the qualification procedure.[147]

4. Equipment Specification and Calibration

The smoke generator used for training and certification of compliance observers is constructed according to design and performance specifications that allow its output opacity to be measured and the generator to be calibrated.[148] Its basic components are generator units for black and white smoke, fan and stack chimneys, and a control panel and strip chart recorder.[149] Output opacity is measured with a transmissometer, a device that reads transmission of light through the plume.[150] The smoke generator must produce smoke of opacities ranging from 0 to 100 percent.[151] The EPA recommends, but does not require, that the machine be able to achieve and hold opacities in 5 percent increments at plus/minus 2 percent for a minimum of 5 seconds.[152] Detailed calibration instructions for the smoke generator and its ancillary equipment are provided in the *Code of Federal Regulations*[153] and EPA's *Quality Assurance Handbook*.[154]

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144. *See id.*
145. *See id.* § 3.2.
146. *See id.* § 3.1.
147. *See id.*
148. *See id.* § 3.3.
149. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.1.2.4.
150. *See id.*
151. *See id.*
152. *See id.*
153. *See* Method 9, *supra* note 106, §§ 3.3.1-3.3.2.7.
154. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108 § 3.12.1.2.5.

5. Uncontrollable Variables and Sources of Error Recognized by the EPA

In addition to the emissions-specific variables cited in section B.1, the EPA has identified variables which are uncontrollable during field operations and which may significantly affect the appearance of the plume and the observer's ability to rate its opacity.[155] These include how brightly the sun is shining on the plume, "luminescence", and the color contrast between the plume and the background against which it is viewed.[156] According to the EPA, field studies show that a plume is most visible and also "presents the greatest apparent opacity" when it is "viewed against a contrasting background."[157] The EPA's field trials have determined that observers rate plume opacity most accurately when a contrasting background is present.[158]

a) Sources of Positive Observational Error

A bright cloudless afternoon therefore logically suggests itself as perfect for plume viewing. However, the EPA notes that when a plume is viewed under these seemingly ideal conditions, there is the greatest potential for "positive error."[159] A positive error, or "positive bias", increases the likelihood that the observer will incorrectly cite a facility operator for an emissions violation as a result of an observational error.[160]

b) Sources of Negative Observational Error

Likewise, the apparent opacity of a plume diminishes as color contrast and luminescence decrease.[161] As color contrast and luminescence approach zero, apparent opacity approaches zero.[162] A white or gray plume viewed on a gray November day will be difficult to assess, and as dusk approaches will become even more problematic. The EPA notes that as conditions become less contrasting, the observer tends to make negative errors.[163] This

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155. *See* Method 9, *supra* note 106, Introduction.
156. *See id.*
157. *Id.*
158. *See id.*
159. *See id.*
160. *See id.*
161. *See id.*
162. *See id.*
163. *See id.*

negative bias decreases the likelihood that the facility will be cited for an opacity violation as a result of observer error.[164]

6. Uncontrollable Variables and Sources of Error Not Discussed by the EPA

The greatest unacknowledged variable and potential source of error in Method 9 is its most crucial piece of equipment - the human eye. It strains credulity to assert that scientifically valid evidence can be obtained from observations made by individuals with "calibrated eyes". The EPA barely acknowledges this, saying, "In practice, the evaluation of opacity by the human eye is a complex phenomenon and is not completely understood".[165] Therefore, it is important to understand the level of accuracy obtainable with the method.

7. Obtainable Levels of Accuracy

The EPA discusses unspecified studies evaluating the magnitude of positive errors that qualified observers may make under contrasting conditions.[166] The studies were based on field trials in which 769 sets of twenty-five readings each were assessed.[167] Black and white plumes were each observed.[168]

Recall that "positive error" increases the likelihood that the observer will mistakenly note a violation.[169] For any set, the positive error was determined as equal to:

> (average opacity obtained from the observer's twenty-five observations) – (average opacity obtained from the twenty-five recordings made by the generator's transmissometer).[170]

In the case of black plumes, sets produced by a smoke detector were observed while its output was measured by the generator's transmissometer.[171] Of the 133 sets observed, 100 percent of the sets were read with a positive error of less than 7.5 percent opacity[172] and

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164. *See id.*
165. QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.1.1.
166. *See* Method 9, *supra* note 106, Introduction.
167. *See id.*
168. *See id.*
169. *See id.*; *see also supra* text accompanying notes 159-60.
170. Method 9, *supra* note 106, Introduction.
171. *See id.*
172. *See id.*

99 percent were read with a positive error of less than 5 percent opacity.[173]

In the case of white plumes, the sources varied: 168 sets were observed at a coal-fired power plant, 170 sets were observed at a smoke generator, and 298 sets were observed at a sulfuric acid plant.[174] For white plumes, 99 percent of the sets were read with a positive error of less than 7.5 percent opacity, while 95 percent were read with a positive error of less than 5 percent.[175]

The EPA cautions observers that valid observations can only be conducted when the sun is "positioned at the observer's back."[176] The observer's failure to do this can result is "significant positive bias," a consequence of forward light scatter.[177] The Agency stresses that its studies show that when "improper sun angle" is eliminated, "observation biases [instead] tend to be negative."[178]

Recall that "negative bias" results in a decrease in the likelihood that the facility will be cited for an opacity violation as a result of the observer's error.[179] Consequently, as long as the observer keeps himself correctly positioned to the sun and eliminates positive bias, a reading that indicates a violation can be regarded as the minimum opacity required to trigger a violation.[180] The plume is at least dense enough to be in violation, and may be even more so. Thus, the documentation of the violation is valid.[181] For example, if a power plant's emissions are required not to exceed 20 percent opacity and the observer reads 30 percent, the reading is arguably *at least* 30 percent, and likely higher.

VI. A *DAUBERT* ANALYSIS OF METHOD 9

This section illustrates how the *Daubert* factors developed in Part IV can be applied to Method 9. Because Method 9 generates data rather than evaluates it, Method 9 falls into the category this paper refers to as technology.[182] The factors proposed in Part IV. B. have been examined. Of these, fourteen have been identified as cogent to

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173. *See id.*
174. *See id.*
175. *See id.*
176. QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.4.4.1.
177. *See id.*
178. *Id.*
179. *See* Method 9, *supra* note 106, Introduction; *see also supra* text accompanying note 163.
180. *See Quality Assurance Handbook, supra* note 108, § 3.12.4.4.1.
181. *See id.*
182. *See supra* text accompanying notes 75-76.

technologies and to Method 9.[183] The fourteen are drawn from eight of the nine guideposts suggested by Black, and from the suggested tenth factor. In theory, these factors should allow a well-rounded assessment of Method 9's scientific validity. As before, each factor is presented in italics. A brief discussion then illustrates how a court could apply it to Method 9. Because no specific data is available, a thorough assessment of Method 9 is not possible. The method is used simply to illustrate application of the proposed factors. A discussion of the results of this application concludes this section.

Factor (1)(a)

In the case of a technology, has it been subjected to rigorous testing by someone with the pertinent expertise to test it objectively?

It appears from the studies cited by the EPA[184] that Method 9 has been subjected to testing sufficient to determine sources of error, whether the source of error leads to positive or negative bias, and the degrees of bias within which the method can be expected to give an acceptable result. A court's task would be to examine these studies to verify these claims. A court would also examine the citations as the end of Method 9,[185] and the list of seventeen references provided in the EPA's *Quality Assurance Handbook*.[186] In applying this factor, a court would select those studies and references that document testing of Method 9 and evaluate them for objectivity and sufficient expertise.

Factor (2)(a)

Is there a logical relationship between the underlying theory and the technology that purportedly applies it? Valid scientific theory cannot be used to support an invalid application. A valid connection must be demonstrated between the theory and its application.

Method 9 is based on two theories, and both require examination. The first is that the amount of particulate matter in a plume directly correlates with the amount of light the plume obscures. In essence, the theory says that the background to a plume is obscured in direct

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183. The remainding factors addressed data evaluation methodology, or were otherwise inapplicable.

184. *See supra* Part V.C.5.-7.

185. *See* Method 9, *supra* note 106, § 4.

186. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.9.

proportion to the amount of particulate in the plume. Support for this is readily found in common observation and in optics physics. Specifically, the EPA cites a basic physics textbook to support the theory;[187] thus, in this case, the connection between theory and application can be readily demonstrated.

The second theory is that the human eye can be trained to read opacity in increments and with reasonable accuracy. As noted, this seems improbable, and the EPA acknowledges that the process is not completely understood.[188] However, the EPA's field studies document that opacity can be read in 5 percent increments and with reasonable accuracy, given that the observations are made within a recognized range of conditions.[189] Given the underlying theory that the eye can be calibrated, a logical relationship exists between the theory and the visual observation technology of Method 9 in the sense that the eye is trained to function as a transmissometer or CEM. However, because the mechanics of this process are not understood, the question remains unanswered - it is merely descriptive, not explanatory. Until the mechanism is better understood, it will not be possible to posit a truly logical relationship between the theory and its application and thus, this factor's application is the weakest one in this analysis.

Factor (2)(b)

Is the technology's mechanism consistent with the theory it is based on?

To a certain extent, Factor (2)(b) mirrors Factor (2)(a). But as an illustration of "consistency of mechanism with theory", Method 9 successfully applies principles of optics and physics to measure opacity by exploiting the behavior of light and the reflective, refractive, and optically absorptive qualities of particulates.

Factor (2)(c)

Can the technology used for one type of emissions parameter be successfully applied (with only reasonable modification) to use with another?

While Method 9 is generally limited to emissions from major stationary sources, the EPA states it is possible to adapt Method 9

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187. *See* Method 9, *supra* note 106, § 4 (citing E.U. CONDON & H. ODISHAW, HANDBOOK OF PHYSICS (1958)).

188. *See supra* text accompanying note 165.

189. *See supra* Part V.C.7.

with minor modifications to measure "fugitive emissions."[190] Fugitive emissions arise from sources other than conventional stacks or vents.[191] For the court to apply Factor (2)(c) in this case, it would have to make an objective assessment of this application's effectiveness in practice, ideally evaluating available studies. Lacking the availability of such studies, a court would have to undertake extensive data collection and evaluation.

Factor (3)(a)

The technology has not been applied in such a way as to manipulate the data to demonstrate inconsistent or contradictory results.

With respect to this factor, a court would be obliged to review the specific data for the case at hand. It is theoretically possible for an observer to intentionally bias the data. However, certain features of Method 9 deter such bias. First, the instructions in the *Quality Assurance Handbook* for on-site field observations are mandatory.[192] These include detailed administrative and technical procedural instructions designed to lay a proper evidentiary foundation in the event of a subsequent enforcement action.[193] Second, while the observer is under no obligation to take the measurements from a point on the facility property, other required measurements necessitate plant entry. The EPA's instructions on plant entry are mandatory and include the requirement that the observer supply the company official with a copy of the opacity readings whether they were taken on or off the site.[194] Third, the data recording sheet provided by the EPA makes it difficult to manipulate observation data because the sheet requires a detailed account of site conditions.[195] These points, along with the fact that on-site readings will almost certainly be made in the company of a facility official, act to deter an observer from "fudging" data.

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190. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.4.4.10.

191. Fugitive emissions are usually produced from outdoor industrial activities such as open burning, demolition, mineral crushing and sorting, and moving raw materials under windy conditions. *See id.*

192. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.0 (citing § 3.12.4).

193. *See id.* § 3.12.0.

194. *See id.* § 3.12.4.2.3.

195. *See id.* § 3.12.4 fig. 4.2.

Factor (4)(a)

In the case of a monitoring technology, has it been subjected to testing that will duplicate the full range (and even push the outside limits) of the conditions under which it will be used? If such testing has been done, to what degree of reliability have the results been determined, and within what ranges of conditions?

As discussed earlier, the EPA has conducted field trials which have established the conditions within which Method 9 can reliably be used, and the degree of reliability which can be expected when they are met.[196] The edition of Method 9 in the *Code of Federal Regulations* addresses the major limiting conditions succinctly.[197] However, the mandatory section of the Agency's *Quality Assurance Handbook* identifies additional conditions, addresses them in much greater detail, and whenever possible provides instructions to correct for any associated error.[198] The EPA has clearly established the range of conditions under which Method 9 can be reliably used, and a court would take this into account in evaluating the data.

Factor (5)(a)

If a facility abandons use of one technology for another, is its decision justifiable on grounds of improving accuracy in data generation, or are other factors involved?

A court may use this factor when an allegedly violating facility attempts to introduce competing evidence obtained with an alternative technology. This is unlikely to be an issue with respect to Method 9, but may occur with respect to CEMs. Prior to the CAAA, the General Accounting Office (GAO) was charged with determining whether the EPA had used the most appropriate methods for detecting violations at major sources.[199] The GAO's report identified CEMs as providing data continuously, directly, and of an accuracy superior to that from inspections.[200] The GAO report resulted in the CAAA's requirement that major sources install CEMs or comparable devices as part of their compliance with Title V.[201]

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196. *See supra* Part V.C.7.
197. *See* Method 9, *supra* note 105, § 2.
198. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 107, § 3.12.4.4.
199. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9, at 1.
200. *See id.* at 2.
201. *See* Compliance Assurance Monitoring, 40 C.F.R. § 64.3(a) (1999).

The CAAA allows major sources to adopt alternative monitoring technologies[202] and the ACE Rule allows a major source to introduce evidence other than CEM data.[203] In applying Factor (5)(a), a court would require that the technology producing the data be at least as accurate as the one it displaced. A showing that improved accuracy was obtained with the alternative technology would enhance reliability and admissibility. Other factors, such as cost effectiveness, would not figure into the analysis.

Factor (6)(a)

Does a record exist indicating why the EPA has adopted a given technology? Can adoption of the technology be justified solely on grounds of scientific accuracy and completeness of the data it will produce? If other factors were involved, what are they, and to what extent did they influence the decision?

This factor is very much like Factor (9)(b), which directs a court to examine whether the technology is purely based on science, or whether the EPA has incorporated non-science based policies. However, Factor (6)(a) bears examination because non-policy considerations can easily play into Agency decisions. Sometimes adoption of one technology may actually be a failure to adopt a competing technology. This may result from non-policy reasons, such as intra-agency failures of communication. For example, the GAO report documents inconsistent guidance and direction by the EPA's headquarters to its regional offices with respect to implementing use of CEMs by industries.[204] Although the EPA had authority prior to 1990 to require industries to use CEMs,[205] headquarters' failure to consistently support the program undermined its implementation in Regions III and IV.[206] This resulted in Method 9's continued adoption by default. Given these circumstances, and that CEMs produce an essentially continuous stream of data and Method 9 is highly limited in its use, a court should fault Method 9 for reliability under this factor.

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202. *See id.* § 64.3.
203. *See* Source Surveillances, 40 C.F.R. § 52.12(c) (1999).
204. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9, at 28-29.
205. *See id.* at 13 (citing § 114 of the CAA).
206. *See id.* at 28-29.

Factor (7)(a)

Are points identified in the data generation process (i.e., the technology) where error may be introduced? Have they been addressed?

In the case of Method 9, this factor turns out to be very similar to Factor (4)(a), which queries whether the technology has been tested to determine the limits under which it can be reliably used.[207] As noted, the EPA's *Quality Assurance Handbook* identifies points in the method where error may be introduced, and addresses them wherever possible with instructions to correct for them.[208] A court should note this feature of the method in weighing the reliability of the data it generates.

Factor (7)(b)

Is the technology's equipment maintained and calibrated with the appropriate procedures and frequency, and according to objective and independent standards?

Method 9's equipment is the observer's trained eyes. The observer may also use non-mandatory equipment – a rangefinder, clineometer for determining the vertical viewing angle, and binoculars - to improve the quality of his observations.[209] A court should apply this factor to the specific observer and the equipment he used in the case at hand. The *Quality Assurance Handbook* provides instructions for maintenance and calibration of the non-mandatory equipment.[210] With respect to applying this factor to the observer's eyes, a court should look at the observer's certification. Certification or six-month renewal is documented by a letter of certification and a copy of the qualification form.[211] The training facility retains the original of the qualification form for at least three years, in the event of any subsequent legal proceeding.[212] The Agency recommends, but does not require, that the training facility maintain a bound logbook of training sessions for at least three years as evidence that the observer has been certified by a recognized smoke training and certification group.[213] A court should certainly

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207. *See supra* text accompanying notes 87-91.
208. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.4.4.
209. *See id.* § 3.12.2.
210. *See id.*
211. *See id.* § 3.12.1.3.
212. *See id.*
213. *See id*.

review these materials in applying this factor to determine the validity of the observations.

Factor (7)(c)

Is the sampling/measurement regime representative of the full range of operating conditions the facility experiences?

Method 9 can only be used under a restricted set of conditions. Due to these limitations, it cannot be used to obtain data throughout the range of variation a major source may experience through the course of a 24-hour day or four seasons. However, Factor (7)(c) may not be applicable, depending on the government's case.

If the Agency is simply trying to prove one or more violations of the facility's opacity standard, then this factor is not relevant. The Agency's case is that the facility violated its opacity standard for the requisite amount of time, for whatever number of times it was observed. All the Agency needs to do is to demonstrate that Method 9 was applied within the limits of its reliability over the periods in which the government asserts the source violated. Method 9 is insufficient if the government's case is that the facility was in continuous noncompliance for a given period. While observations are not limited by the conditions the facility experiences, the observations are restricted by the conditions in which Method 9 is reliable.

Factor (9)(a)

In the context of environmental compliance, it is especially important for a court to examine the standard methods used, including any EPA standard methods.

Recall that Factor (9)(a) is derived from Black, Ayala, and Saffran-Brinks's ninth principle of scientific validity - the degree to which the hypothesis has been subjected to peer review and publication.[214] While this principle should not be used as a surrogate by a court, *Expert Evidence* suggests that when a court deals with applied science, a court should give special attention to "general acceptance, potential sources of error, and the plausibility of any assump-

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214. *See supra* text accompanying notes 100-101.

tions."[215] Likewise, the expert's report should explain his reasoning, and this reasoning should make sense.[216]

This principle of validity supports Factor (9)(a). Factor (9)(a) is important in the context of the CAA because Method 9 is a reference method[217] and the EPA expects reference methods to function as "benchmarks" for non-reference methods.[218]

In applying Factor (9)(a) to a reference method, a court will be examining its general acceptance, the potential sources of error, and the plausibility of its assumptions. In examining Method 9, a court will find general acceptance documented by the reference materials in the *Code of Federal Regulations*[219] and the EPA's *Quality Assurance Handbook*.[220] A court will identify the potential sources of error, which have been discussed previously,[221] and it will accept as underlying assumptions the principles of physics and optics that support the concept of percent opacity.[222] A court may struggle with the "not completely understood" mechanism of visual observation,[223] but the observer's expert testimony will likely be considered valid, hence reliable, if the observer's field report thoroughly documents the observations and shows they were made under conditions within limits set by the sources of positive and negative error. The report will adequately explain the observer's conclusion of a violation.

Further, the observer's testimony would be considered reliable under *Kumho Tire*. *Kumho Tire* affirms *Daubert*'s position that the court's "gatekeeping" function is not limited to "scientific" knowledge,[224] and that the court may admit expert testimony on the "assumption that the expert's opinion will have a reliable basis in the knowledge and experience of his discipline."[225] *Kumho Tire* will support the admission of expert testimony, given a showing by the observer of sufficient training and expertise.[226]

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215. Black, *supra* note 8, at 785.
216. *See id*.
217. *See* Method 9, *supra* note 106, Introduction.
218. *See supra* text accompanying note 26.
219. *See* Method 9, *supra* note 106, § 4.
220. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.9.0.
221. *See supra* Part V.C.5.
222. *See supra* Part V.B.2.
223. *See* QUALITY ASSURANCE HANDBOOK, *supra* note 108, § 3.12.1.1.
224. *See Kumho Tire*, 526 U.S. at 147-49.
225. *Id.* at 148 (citing *Daubert*, 509 U.S. at 592).
226. *See id.*

Factor (9)(b)

Does the technology have a purely scientific basis, or does it incorporate non-scientific, policy-based rationales?

The EPA's adoption of CEM technology illustrates this factor. As noted in the discussion under Factor (5)(a), the CAAA requires major sources to install CEMs or comparable equipment as part of their Title V compliance.[227] Here, the Agency forced facilities to adopt another technology partly on the basis of superior reliability.[228] The change also resulted from a change in Agency policy to a more aggressive enforcement position - a non-science based reason. In this instance, the EPA's change in policy did not compromise the reliability of the new technology. Instead, the policy change supports enhanced, uncompromised reliability.

From this it can be seen that Factor (9)(b) is really a two-pronged test for reliability. A court must ask:

1. Does the technology have a scientific basis? This is a threshold question. If it does not, then the technology's reliability is immediately questionable under Factor (2)(a).
2. Even if the technology has a scientific basis, does it incorporate non-scientific, policy-based rationales? Here a court would need to examine Agency records, if any, which indicate why the EPA adopted the method.

As illustrated above, adoption of CEMs would readily pass scrutiny under both questions. The science of CEMs is sound and the policy behind their adoption encourages reliability.

Had a court examined the use of Method 9 under this factor prior to 1990, it would likely have come to another conclusion. While Method 9 might have passed the first prong, especially given the limited state of emissions monitoring technology at the time of the first CAA's passage, the court would certainly have questioned the validity of the results based on the policies underlying its application. Recall that prior to 1990, the EPA notified facilities in advance of inspections, giving sources the opportunity to fine-tune control equipment beforehand.[229] The EPA's policy rationales for this were resource limitations and the press of higher priority

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227. *See* Compliance Assurance Monitoring, preamble, 40 C.F.R. § 64.3(a) (1999), 62 Fed. Reg. 54900, 54902 (1997).

228. *See id.*

229. *See supra* text accompanying note 11.

activities,[230] both non-science reasons. Had a citizens' suit been brought under the CAA for a source's chronic violations, a court applying Factor (9)(b) would have found the EPA or state data from Method 9 to fail for reliability given these policies.

Factor (10)(a)

Does each link in the chain of reasoning used to support the application of the technology sustain the assessment for validity?

Factor (10)(a) reminds a court that objectivity is the measure of validity, hence reliability. In applying Factor (10)(a) to Method 9, a court's assessment might look like this:

"Link"	Applied Objectively?
1. Underlying scientific principles of Method 9.	Yes – the underlying principles are well-understood tenets of light and optics physics.
2. Application of principles of Method 9 in the visual observation technique.	Yes – although the mechanism by which the human eye measures the data is not completely understood, there is a known range of accuracy within specific conditions.
3. Application of Method 9 in the case at hand.	Yes – if the observer can testify that he is adequately trained, currently certified, and conducted the test within acceptable conditions. No – if the observer cannot testify that he meets these requirements.

230. *See* U.S. GENERAL ACCOUNTING OFFICE, *supra* note 9, at 27.

4. Element of law to be proved.	Yes – if the Method 9 observations are used to prove violations of a facility's opacity standards. No – if the Method 9 observations are used to prove an emissions violation other than an opacity standard.

In reviewing the results of this application of suggested factors to Method 9, some redundancy is apparent. Factors (2)(a) and (2)(b) conflate to a question of whether a logical link exists between an underlying theory and its application. Factors (1)(a), (4)(a), and (7)(a) and (7)(c) reach the issue of data reliability. And Factors (6)(a) and (9)(b) both attempt to identify any non-science components in the technology.

This possibility of redundancy is not necessarily a disadvantage. What may result in redundancy in the *Daubert* analysis of one technology or method may lead to a very different outcome in the analysis of another. Depending on the technology or method, some approaches may be more illuminating than others. A multitude of approaches gives a court more angles from which to inspect the evidence. Most importantly, the availability of many approaches may prompt a court to identify even more appropriate factors for the evidence at hand.

VII. CONCLUSION

The Clean Air Act Amendments of 1990 have expanded the enforcement exposure of major stationary sources to a level that is still not completely understood. The Any Credible Evidence Rule will figure prominently in this expansion. While the ACE Rule gives little guidance as to what constitutes credible evidence for purposes of litigation, it is clear that the EPA intends to take an expansive view. However, neither the EPA nor any of the CAAA's stakeholders - industry, environmental policy-setters, and the portion of the public that articulates its concern for clean air via citizens suits - have recognized that *Daubert* requires the threshold test for any proffered evidence to be a demonstration of its scientific validity.

This paper shows that *Daubert* factors can be specifically designed to assess environmental compliance technologies and

methods. Further, this paper illustrates the successful application of these factors to an emissions monitoring technology, illuminating the technology's strengths and limitations. The factors achieve this by focusing on how the data is obtained and how sources of error and non-science considerations may influence the data. In keeping this focus, the factors remain true to *Daubert*'s charge that a court must determine the reliability of the expert's reasoning before it can admit the expert's result.

Counsel for major stationary sources can take the first step to protect their clients by mastering the concepts of scientific validity. Counsel can use this understanding to develop *Daubert* factors to assess facility compliance and identify areas that can be corrected well in advance of the threat of enforcement. By working though this process proactively, counsel will be prepared to control the definition of issues early in any litigation that does occur.

THE EMERGING FEDERAL ROLE IN GROWTH MANAGEMENT

JASON C. RYLANDER*

Table of Contents

I. INTRODUCTION

On January 11, 1999, Vice President Al Gore proposed a bold new federal initiative to build "more livable communities."[1] Targeted at the suburbs, where fifty percent of the nation's population now resides,[2] the Clinton-Gore Livability Agenda (the Livability Agenda) for the twenty-first century includes more than $10 billion in incentive programs for localities to preserve green space, ease traffic congestion, and pursue regional growth management strategies.[3] Specifically, the Clinton administration is proposing $700 million in new tax credits for state and local bonds to preserve open space and redevelop abandoned brownfields, $6.1 billion in grants for public transportation programs, and $1.6 billion

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1. Al Gore, Remarks as Prepared for Delivery by Vice President Al Gore Livability Announcement (Jan. 11, 1999) <http://www.pub.whitehouse.gov/uri~res/I2R?urn:pdi://oma.eop.gov.us/1999/1/12/6.text.2>.

2. *See* Alison Mitchell, *Two Parties Prepare for Biggest Battle Yet in Fight for Suburbs*, N.Y.TIMES, May 4, 1999, at A1.

3. *See* Gore, supra note 1.

for state and local efforts to reduce air pollution and traffic congestion.[4]

The Livability Agenda is the latest recognition that urban sprawl has become an important national issue. Spurred on by federal subsidies, development has transformed the American landscape. Metropolitan areas across the country have expanded at rates far exceeding population growth.[5] Fire and flood disasters increase as people infringe in ever-greater numbers on sensitive natural areas.[6] Green spaces are fragmented. Runoff from roads, parking lots, lawns, and farmland carry a toxic soup of pollution into the nation's ground and surface water.[7] As development surges out beyond the beltways, center cities suffer economic blight, and society is further segmented along race and class lines.[8] Productivity lost to time spent in traffic is measured in millions of dollars.[9] Aldo Leopold perhaps put it best: "[t]hat land yields a cultural harvest is a fact long known, but latterly often forgotten."[10]

For many communities, the Livability Agenda's promise of federal assistance is welcome. Nine states have enacted state-wide growth management plans, and many more localities have enacted plans to curb sprawl and promote smarter growth.[11] In 1998 alone, nearly 200 state and local governments approved ballot initiatives related to controlling suburban development.[12] The majority of the Livability Agenda proposals rely on federal dollars to encourage state and local governments to take additional similar actions.[13]

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4. *See id.*

5. *See, e.g.*, LAND USE IN AMERICA 85-94 (Henry L. Diamond & Patrick F. Noonan eds., 1996); Kenneth T. Jackson, *America's Rush to Suburbia*, N.Y. TIMES, June 9, 1996, at E15.

6. *See* LAND USE IN AMERICA, *supra* note 5, at 1-3.

7. *See id.* at 3; *see also* William K. Reilly, *Across the Barricades*, *in* LAND USE IN AMERICA, *supra* note 5, at 187, 195-96.

8. *See, e.g.*, LAND USE IN AMERICA, *supra* note 5, at 1; J. Peter Byrne, *Are Suburbs Unconstitutional?*, 85 GEO. L.J. 2265, 2286 (1997) (book review).

9. *See* Jason Rylander, *The Crawl of Sprawl: The Northeast's Biggest Environmental Problem?*, AMC OUTDOORS, Oct. 1997, at 16.

10. ALDO LEOPOLD, A SAND COUNTY ALMANAC AND SKETCHES HERE AND THERE at ix (Oxford Univ. Press 1987) (1949).

11. *See, e.g.*, LAND USE IN AMERICA, *supra* note 5, at 26-27; Matthew W. Ward et al., *National Incentives for Smart Growth Communities*, 13 NAT. RES. & ENV. 325 (1998). As of 1995, statewide growth management plans were enacted in Florida, Georgia, Maine, Maryland, New Jersey, Oregon, Rhode Island, Vermont, and Washington. *See* LAND USE IN AMERICA, *supra* note 5, at 26-27. Other states have enacted programs to protect specific regions such as Cape Cod, Massachusetts, the Lake Tahoe Basin of California and Nevada, and the Adirondacks of New York. *See id.*

12. *See Sprawl Brawl*, REASON ONLINE (Apr. 8, 1999) <http://www/reasonmag.com/bisprawl.html>.

13. *See Clinton-Gore Livability Agenda: Building Livable Communities for the 21st Century* (Jan. 11, 1999) <http://www.pub.whitehouse.gov/uri-res/I2R?urn:pdi://oma.eop.gov.us/

The Livability Agenda raises fundamental questions, however, about the nature and function of the federal government in addressing problems such as sprawl and "livability." The Vice-President's own comments illustrate the ambiguities that accompany federal incursions in the field of planning:

> Of course, the federal government's role should never be that of beauty commissar. It is not appropriate for us to get into the business of local land use planning. But it is our job to work with states, such as Governor Glendening's Maryland, to support their remarkable smart growth efforts. It is our job to amplify citizens' voices, and make it easier for communities to get their hands on the tools they need to build the way they want. It is our job to keep learning from community successes, and do what we can to support them.[14]

Such comments do little to explain on what the federal government can constitutionally achieve in land use planning. Even less meat can be pulled off these rhetorical bones when it comes to defining the role of the federal government in curbing sprawl and promoting sustainability.

Increasingly, America's politicians are at odds with themselves over how to satisfy the public's competing demands for jobs, housing, economic development, transportation, environmental quality, farmland, open space, wildlife, and recreation. Growth fuels prosperity, but less apparent are its attendant social, economic, and environmental costs. The rise of sprawl as a political issue suggests that the public is beginning to realize what it has lost to the uncompromising engine of progress.

The proposed federal intervention in growth management should be welcome news to environmentalists, but modern interpretations of the United States Constitution's commerce and takings clauses may constrain direct federal involvement.[15] Indeed, Constitutional provisions are increasingly being invoked to attack environmental regulation.[16] Nevertheless, the federal government

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1999/1/11/14.text.1>.

14. Gore, *supra* note 1.

15. *See, e.g.*, Printz v. United States, 521 U.S. 898 (1997); United States v. Lopez, 514 U.S. 549 (1995); New York v. United States, 505 U.S. 144 (1992).

16. For recent discussions of takings challenges, see, for example, JOHN ECHEVERRIA, LET THE PEOPLE JUDGE (1995); Carol M. Rose, *A Dozen Propositions on Private Property, Public Rights,*

retains ample authority to act in this arena through conditional and incentive spending programs. The Livability Agenda is but the latest and most prominent example of how federal fiscal policy can be used to achieve lasting impacts on regional growth.

This Article explores the potential of federal fiscal initiatives to impact growth management in the states. Part II outlines how growth trends impact society and the environment. The existing federal role in land use policy is discussed in Part III. Part IV analyzes the Constitutional bases for federal action in growth management, including recent federalist jurisprudence. Finally, Part V highlights how some federal programs are already making a difference in this arena and discusses the importance of the Constitution's Spending Clause in fostering federal economic incentive programs designed to achieve a more sustainable society.

II. SPRAWL IN AMERICA

"To get away. Away from what? In the long run, away from themselves."[17] D.H. Lawrence's words on the American need to escape are apt in the land use context. Americans are a mobile people, a "frontier society"[18] that until recently viewed its land without limit. American cities swelled with hopeful migrants in the nineteenth and early twentieth centuries; however, droves of people have fled cities for the periphery since the 1950s.[19] By 1970, for the first time, more people lived in suburbs than in cities and rural areas combined.[20] The impact on urban America has been astounding. Of the twenty-five largest cities in 1950, eighteen have lost population.[21] For example, "[t]he population of Chicago proper has dropped 25

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and the New Takings Legislation, 53 WASH. & LEE L. REV. 265 (1996); Marianne Lavelle, *The 'Property Rights' Revolt: Environmentalists Fret as States Pass Reagan-Style Takings Laws*, NAT'L L.J., May 10, 1993, at 34. For challenges based on Commerce Clause or Tenth Amendment grounds, see Jonathan Adler, *The Green Aspects of* Printz*: The Revival of Federalism and its Implications for Environmental Law*, 6 GEO. MASON L. REV. 573, 633 (1998); see also David A. Linehan, *Endangered Regulation: Why the Commerce Clause May No Longer Be Suitable Habitat for Endangered Species and Wetlands Regulation*, 2 TEX. REV. L. & POL. 365 (1998) (arguing that provisions in the Endangered Species Act and Clean Water Act would not survive a Constitutional challenge after *Lopez*).

17. ROBERT D. KAPLAN, AN EMPIRE WILDERNESS 352 (1998) (quoting D. H. LAWRENCE, STUDIES IN CLASSIC AMERICAN LITERATURE (1964)).

18. *Id.* at 44.

19. *See, e.g.*, Jackson, *supra* note 5; LAND USE IN AMERICA, *supra* note 5, at 1; John Turner & Jason Rylander, *Land Use: The Forgotten Agenda*, in THINKING ECOLOGICALLY: THE NEXT GENERATION OF ENVIRONMENTAL POLICY 60 (Marian R. Chertow & Daniel C. Esty eds., 1997).

20. *See* Jackson, *supra* note 5.

21. *See id.*

percent, Baltimore 28 percent, Philadelphia 29 percent, Washington 32 percent, [and] Cleveland 43 percent."[22]

While urban cores declined, populations surged along these city beltways, creating doughnut-like patterns of growth.[23] Between 1970 and 1990, Cleveland's population declined 8 percent, yet its metropolitan area increased by one-third.[24] Urban sprawl is even worse in growing cities. In the past thirty years, Los Angeles's population grew by 45 percent, but its metropolitan area sprawled nearly 300 percent, covering an area the size of Connecticut.[25] Similarly, Chicago's population rebounded four percent, and its urban area grew 46 percent.[26] Finally, Atlanta, believed to have the worst urban sprawl problem in the country, loses 70 acres of open space per day to development.[27]

The American population expands by roughly 2.2 million people each year, and if current trends continue, 80 percent of these people will settle in edge cities located on the urban fringe.[28] Coastal areas, the South, and the inter-mountain West face particularly acute growth challenges.[29] Further, with rapid advances in information technology, it is projected that even more people will seek out remote areas in which to live and work.[30]

Myopic local planning contributes to the problem, as suburban jurisdictions compete ferociously for businesses and development. Municipalities lure businesses through tax breaks, infrastructure improvements, and other guarantees, while the accompanying costs of increased congestion and pollution are frequently borne by neighboring towns.[31] The task of bringing new business to the area requires changes in living and transportation patterns. As jobs shift further from the central cities, people find they can live even further outside the metropolitan area and still

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22. Kenneth T. Jackson, *100 Years of Being Really Big*, N.Y. TIMES, Dec. 28, 1997, at OP-ED.

23. *See, e.g.*, Turner & Rylander, *supra* note 19, at 62; LAND USE IN AMERICA, *supra* note 5, at 88.

24. *See* LAND USE IN AMERICA, *supra* note 5, at 88.

25. *See id*.

26. *See* Turner & Rylander, *supra* note 19, at 62.

27. *See* Alec Zacaroli, *Air Pollution: Urban Sprawl Presents Growing Threat to Cities; Atlanta Leads Pack, Group Says*, NAT'L ENV'T DAILY (BNA) at A-1 (Sept. 10, 1998).

28. *See* LAND USE IN AMERICA, *supra* note 5, at 85-87.

29. *See id.* at 87-91.

30. *See id.* at 95.

31. This phenomenon, the so-called "race to the bottom" has been discussed in numerous articles. *See, e.g.*, Lynn A. Baker, *Conditional Federal Spending After* Lopez, 95 COLUM. L. REV. 1911, 1951 n.186 (1995); Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992).

have a reasonable commute to work. Those individuals left behind in the older core cities, increasingly members of minority groups, face diminished job prospects, crumbling neighborhoods and economic disparity.[32] Social stratification by race and class is a serious and often overlooked consequence of sprawl.[33]

Further, overlapping governmental entities, while pursuing worthwhile goals, can contribute to regional fragmentation and distress. Suburban growth has caused a proliferation of municipal jurisdictions.[34] "In 1990, 48.5 million people, almost one-third of all U.S. urban residents, were scattered among 18,219 municipal units of fewer than 25,000 inhabitants."[35] Local laws regulating everything from land use to liquor sales vary widely among these political subdivisions.[36] In addition to the municipal corporation, some 3,041 counties checker the nation's landscape, along with more than 28,588 "special districts," whose power it is to provide services such as sewage treatment, water quality, and mass transit.[37] "The aggregate result in most U.S. metropolitan areas is a political geography of byzantine complexity."[38] The resulting land use governance structure is not only complex, it is also remarkably inadequate to cope with the myriad land use and environmental issues these governments must face.

III. THE EXISTING FEDERAL ROLE IN LAND USE POLICY

Although environmental policies are traditionally debated at the federal and state level, "[i]t is almost a maxim that all land use is a local matter."[39] That this maxim retains credibility is surprising in light of the pervasive federal influence in the arena. As this Part will show, historically, the federal government has played a much greater role in the shaping of land use policy than is commonly understood.

Today, land use regulation is increasingly centralized and local governments are no longer the predominant regulatory entity.

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32. *See* Baker, *supra* note 31, at 1951 (admitting that this race-to-the-bottom problem often justifies federal regulation).

33. *See* Byrne, *supra* note 8, at 2286. For more detailed discussions of how land use impacts racial issues, see, e.g., CHARLES M. HAAR, SUBURBS UNDER SIEGE: RACE, SPACE, AND AUDACIOUS JUDGES (1996); DAVID L. KIRP ET AL., OUR TOWN: RACE, HOUSING, AND THE SOUL OF SUBURBIA (1995).

34. *See* RUTHERFORD H. PLATT, LAND USE AND SOCIETY: GEOGRAPHY, LAW, AND PUBLIC POLICY 135 (1996).

35. *Id.*

36. *See id.* at 137.

37. *See id.* at 145-46.

38. *Id.* at 142.

39. Ward, *supra* note 11, at 325.

Regional, state, and federal agencies have an increased presence in land use restrictions.[40] Contrary to assertions of states' rights advocates, the federal government has long been involved in the land regulatory arena. As historian Patricia Limerick notes, "from 1789 to 1834 Congress passed a total of 375 land laws—laws adjusting the size of lots for sale, shifting the price per acre, altering the requirements for cash payments or adding the option of credit, and granting rights of preemption in specific regions."[41] Expansion was a national goal.

In the West, federal policies made possible much of the private land development in place today.[42] By 1944, billions of federal dollars had already been spent to harness waterways for hydropower and irrigation in seventeen Western states.[43] "Since then, the Bureau of Reclamation has built 254 diversion dams, 348 reservoirs, 1,460 miles of pipeline, and 54,535 miles of canals and drains" all of which deliver more than 10 trillion gallons of water to support farming, industry, and plumbing for some 30 million people.[44]

The federal government's profound impact on development extended far beyond settling the frontier.[45] Franklin Roosevelt's New Deal programs dramatically expanded the federal role in regional development, and its most visible legacy, the Tennessee Valley Authority (TVA), remains an internationally significant experiment in governmental planning.[46] Created by Congress in 1933, the TVA was a public corporation designed to focus federal aid on an impoverished Tennessee River basin region.[47] The TVA's dams harnessed the river for power, recreation, navigation, and flood control, and the project also spawned "pioneering programs in soil erosion management, reforestation, economic development, and improvement of housing, medical care, schools, and recreation."[48] Another New Deal program, the Resettlement Administration, experimented "with the planning and construction of small

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40. *See* Frank J. Popper, *Understanding American Land Use Regulation Since 1970*, 54 J. AM. PLAN. ASS'N 291 (1988).

41. PATRICIA N. LIMERICK, THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST (1987).

42. *See* BILL BRADLEY, TIME PRESENT, TIME PAST 224 (1996).

43. *See id.*

44. *Id.*

45. *See* Turner & Rylander, *supra* note 19, at 67. *See generally* PLATT, *supra* note 34, at 369-469; JAMES HOWARD KUNSTLER, THE GEOGRAPHY OF NOWHERE, 90-108 (1993).

46. *See* Platt, *supra* note 34, at 394-95.

47. *See id.*

48. *Id.*

'greenbelt' towns modeled on Ebenezer Howard's Garden City concept."[49] On the rural front, the Soil Conservation Service (SCS), created in 1935, became the prototype for programs providing federal technical assistance through non-federal agencies.[50] Designed to address a soil erosion crisis, SCS continues to have a significant impact in improving private land use practices.[51]

Additional federal involvement came with passage of Section 701 of the Housing Act of 1954.[52] The provision authorized "'planning grants to state, metropolitan, and other regional planning agencies . . . to encourage comprehensive planning, including transportation planning, for states, cities, counties, metropolitan areas and urban regions, and the establishment and development of the organizational units needed therefor.'"[53] Section 204 of the Housing Act called for states to create regional planning agencies or councils of governments within each metropolitan area to coordinate requests for federal assistance under several dozen programs.[54] By the time the program ended in 1981, more than $1 billion had been allocated to local planning initiatives.[55] Supplementing this effort was the Housing Act of 1959, which provided incentives for the development of comprehensive plans across state, regional, and interstate levels.[56] This program established a precedent for "federal support of nonfederal planning at various scales that would later characterize the Coastal Zone Management Program and other federal initiatives of the 1970s."[57]

Federal planning programs continued to proliferate at a steady pace. By 1979, thirty-nine distinct federal programs financially supported or required regional planning.[58] At that time, "regional planning organizations . . . served about 99 percent of the counties in the nation with about three-fourths of their budgets provided by the federal government."[59] For many of these programs, however, funding was cut dramatically during the Reagan

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49. PLATT, *supra* note 34, at 395 (noting that only three such towns were completed, in Maryland, Ohio, and Wisconsin). *See generally* EBENEZER HOWARD, GARDEN CITIES OF TO-MORROW (1965).

50. *See* PLATT, *supra* note 34, at 395.

51. *See id.*

52. *See id.* at 359.

53. *Id.* (quoting Section 701).

54. *See id.* at 360.

55. *See* PLATT, *supra* note 34, at 359.

56. *See id.*

57. *Id.* at 359-60.

58. *See id.* at 360.

59. *Id.* at 361.

administration, and the work of such entities has declined accordingly.[60]

Despite the scope and success of these various federal programs, they pale in comparison to the federal government's transportation infrastructure and home mortgage policies, which both transformed metropolitan America and changed the face of the nation's landscape. Federal transportation policies, designed almost exclusively to accommodate the automobile, greatly exacerbated sprawl.[61] The first federal foray into subsidizing auto use came in 1916 with passage of the Federal Road Act, a $75 million program to improve post roads and encourage states to create their own highway departments.[62] The second Federal Road Act in 1921 began the task of linking 200,000 miles of state highways into a national network.[63] By 1925, funding for a numbered highway system topped $1 billion per year.[64]

The heyday of the 1920s gave way to the Depression, and with the crashing economy went the construction industry; home construction fell by 95 percent, and repairs and renovations all but ceased.[65] Bankruptcies soared, and by 1933, one-half the home mortgages in the nation were in default.[66] At Roosevelt's behest, Congress created the Federal Housing Administration (FHA) to spark a new building boom.[67] With the FHA underwriting the mortgages, lenders could lower interest rates and extend terms from the standard ten years to twenty or even thirty-year payment plans.[68] The average down payment dropped from between 30 to 50 percent down to 10 percent.[69] Undoubtedly, the FHA "radically transformed home ownership in America."[70] Veterans Administration (VA) programs also played a major role, enabling many GIs returning from World War II to purchase a suburban house with no money down.[71]

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60. *See id*.

61. *See, e.g.*, KUNSTLER, *supra* note 45, at 90; Turner & Rylander, *supra* note 19, at 64.

62. *See* KUNSTLER, *supra* note 45, at 90.

63. *See id.*

64. *See id.* Throughout the 1920s and 1930s, thousands of miles of trolley lines were torn up or paved over to accommodate the car. *See* Turner & Rylander, *supra* note 19, at 64.

65. *See* KUNSTLER, *supra* note 45, at 102.

66. *See, e.g.*, KENNETH JACKSON, CRABGRASS FRONTIER 193 (1985); KUNSTLER, *supra* note 45, at 102.

67. *See* KUNSTLER, *supra* note 45, at 102.

68. *See id.*

69. *See id.*

70. *Id.*

71. *See id.* at 104.

Such federal government assistance made the American dream of single-family home-ownership easier to achieve. In the decade following World War II, FHA and VA programs financed nearly half the houses built in the United States.[72] The programs subsidized the flailing construction industry and improved the stock of domestic housing; however, these federally-backed mortgages were only available for new single-family homes.[73] The FHA did not provide loans to repair, remodel, or renovate older houses in the cities, which might have provided affordable urban housing for growing minority and immigrant populations.[74] The FHA in effect drew a line around whole neighborhoods refusing to assist anyone who wanted to build in those areas.[75] This process, called "red-lining," further contributed to the decline of central cities, the outward migration of the middle class, and the social and economic isolation of minorities.[76] When viewed together with changes in federal tax law that made mortgage interest deductible, what emerges is a pattern of tremendous federal subsidies for suburban development.[77]

The 1950s expansion confronted an infrastructure system ill-equipped to handle additional growth.[78] Thus in 1956, Congress approved the Interstate Highway Act, which authorized construction of more than 41,000 miles of new expressways.[79] The federal government provided ninety percent of the funds, while the states funded the remaining ten percent.[80] Predictably, development followed the roads. The new roadways opened thousands of acres of previously isolated land on the urban fringe to development.[81] "Business and suburban development flocked to the off-ramps of the new roads, but such growth came at the expense of cities and open space. The implicit connection between transportation infrastructure and land use regulations was rarely made, and today, existing development patterns reflect that disconnect."[82]

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72. *See* Turner & Rylander, *supra* note 19, at 64-65.
73. *See id*. at 65.
74. *See id*.; *see also* KUNSTLER, *supra* note 45, at 102-03.
75. *See* KUNSTLER, *supra* note 45, at 102.
76. *See id.*
77. *See id.* at 105.
78. *See id.* at 106.
79. *See* Turner & Rylander, *supra* note 19, at 64.
80. *See* KUNSTLER, *supra* note 45, at 107.
81. *See* Turner & Rylander, *supra* note 19, at 64; *see also* KUNSTLER, *supra* note 45, at 107.
82. Turner & Rylander, *supra* note 19, at 64.

The numerous federal development incentive programs described above illustrate the federal government's power to affect private local land use decisions. Suburban sprawl is not merely the amalgam of the choices of individual actors in a free market system; rather, "[t]he American Dream of a cottage on its own sacred plot of earth" essentially became "the *only* economically rational choice."[83] As one scholar has observed:

> While technically [these programs] did not violate the doctrine that land use is a nonfederal concern, they demonstrated the immense capability of the federal government to indirectly influence--through spending, tax incentives, and technical guidelines--the use of private land. FHA regulations literally specified suburban single-family homes as the approved style of housing to be constructed with its assistance. Tying strings to federal benefits was thus a means of exerting federal influence over the form of urban development in the 1950s, whether or not so recognized at the time.[84]

The federal government's involvement in land use, while schizophrenic, has been sweeping and pervasive. As a result, it may take federal involvement to significantly modify current land use policies in order to achieve more sustainable land use patterns.

IV. THE FEDERAL GOVERNMENT'S INCREASING PRESENCE IN GROWTH MANAGEMENT

Renewed interest in federalism and the Tenth Amendment[85] has led some to ponder whether this post-Rooseveltian expansion of federal power into the local land use arena might be brought to a halt.[86] One common argument against further expanding federal involvement in growth management is that such issues are best left to states and localities. A plethora of articles opposing and

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83. *Id.* at 105.

84. PLATT, *supra* note 34, at 395-96.

85. The Tenth Amendment provides: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." U.S. CONST. amend. X.

86. *See, e.g.*, Vicki C. Jackson, *Federalism and the Uses and Limits of Law:* Printz *and Principle?*, 111 HARV. L. REV. 2180, 2213 (1998); Adler, *supra* note 16, at 633.

defending federalism exists.[87] Potential benefits of a federal system include: enhanced opportunities for political participation,[88] a possible check on abuses of government power,[89] greater accountability for decision-makers,[90] opportunities for policy innovation and experimentation,[91] and maximization of choice through local competition and "citizens' rights of exit."[92] Adherents of "localism"[93] naturally believe that state and local governments are the best protectors of these values, but this theory does not always hold true.[94]

For two decades, enactment of federal environmental laws was justified by the very failures of state and local governments to address growing pollution problems.[95] Many states were not economically, politically, or institutionally capable of creating and managing their own pollution control regimes.[96] Arguably, state and local governments may be more easily captured by local industry pressures, casting doubt on the theory that local control is more democratic.[97] The likely possibility that pollution may be spread over multiple governmental entities demonstrates a need for uniform standards.[98] Further, even though federal environmental laws often

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87. *See, e.g.*, DAVID L. SHAPIRO, FEDERALISM: A DIALOGUE (1995); Erwin Chemerinsky, *The Values of Federalism*, 47 FLA. L. REV. 499 (1995); Jackson, *supra* note 86, at 2180; H. Jefferson Powell, *The Oldest Question of Constitutional Law*, 79 VA. L. REV. 633 (1993); Edward L. Rubin & Malcolm Feeley, *Federalism: Some Notes on a National Neurosis*, 41 UCLA L. REV. 903 (1994).

88. *See* Deborah Jones Merritt, *Three Faces of Federalism: Finding a Formula for the Future*, 47 VAND. L. REV. 1563 (1994); *see also* Note, *Federalism, Political Accountability, and the Spending Clause*, 107 HARV. L. REV. 1419 (1994).

89. *See* Gregory v. Ashcroft, 501 U.S. 452, 458 (1991) ("Perhaps the principal benefit of the federalist system is a check on abuses of government power.").

90. *See Federalism, Political Accountability, and the Spending Clause*, *supra* note 88, at 1419. *But see* Garcia v. San Antonio Metro. Transit Auth., 469 U.S. 528, 552 (1985) ("State sovereign interests . . . are more properly protected by procedural safeguards inherent in the structure of the federal system than by judicially created limitations on federal power.").

91. *See, e.g.*, Jackson, *supra* note 86, at 2213; SHAPIRO, *supra* note 87. *But cf.* Susan Rose-Ackerman, *Risk Taking and Re-election: Does Federalism Promote Innovation?* 9 LEGAL STUD. 593, 593-94 (1980) (arguing that politicians' desire to be re-elected may hinder their willingness to experiment).

92. Jackson, *supra* note 86, at 2213 (noting that many scholars are skeptical of this view).

93. Richard Briffault, *Our Localism: Part I—The Structure of Local Government Law*, 90 COLUM. L. REV. 1 (1990).

94. *See* Jackson, *supra* note 86, at 2215 (suggesting that some interests, such as civil rights, are best protected by federal action).

95. *See* Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141, 1142 (1995).

96. *See* James P. Lester, *A New Federalism? Environmental Policy in the States* in ENVIRONMENTAL POLICY IN THE 1990S 61 (Norman J. Vig & Michael E. Kraft eds., 1990).

97. *See id.*

98. *See id.*

require state participation, they generally have been designed with federalism in mind to avoid preemption of state law.[99]

Like the earlier New Deal programs, sweeping environmental laws have altered the meaning of federalism and significantly increased the federal government's role.[100] In addition to the dozens of direct regulatory programs enacted since the 1960s, scores of additional fiscal programs impacting land use and the environment have been adopted. "In the past quarter century alone, federal grants to States and localities have grown from $7 billion to $96 billion" and "now account for about one-fifth of state and local government expenditures."[101] Although the precise lines of authority may always be hotly debated, federal presence in environmental and land use regulation is pervasive.

Though the clock of federal expansion ticks on, its pendulum does indeed swing back and forth. Acknowledging that recent court decisions may signal a swing in favor of state control can be conceded without undermining this Article's central thesis.[102] Moreover, the area where federal intrusion is most pervasive—grants and incentives—remains wholly permissible under current spending clause jurisprudence. Opportunities for federal initiatives in growth management and land use thus remain significant.

A. Recent Jurisprudence

Since the famous case of *Wickard v. Filburn*,[103] the federal government has had virtually unlimited authority to regulate under the Commerce Clause.[104] Even a tangential relationship to interstate commerce seems to suffice.[105] The United States Supreme Court decision *United States v. Lopez*[106] startled many legal scholars because it was the first case in nearly sixty years to strike down a federal law for exceeding Congress's power to regulate under the Commerce

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99. *See* Percival, *supra* note 95, at 1142.

100. *See* PLATT, *supra* note 34, at 402.

101. Garcia v. San Antonio Metro. Transit Auth., 469 U.S. 528, 552-53 (1985).

102. The cases most often cited as proof of federalism's resurgence—*United States v. Lopez*, 514 U.S. 549 (1995) and *Printz v. United States*, 521 U.S. 898 (1997)—are limited in precedential value and scope. These cases shall be considered in turn. *See infra* notes 103 – 130 and accompanying text.

103. 317 U.S. 111 (1942) (holding that growing wheat for on-farm consumption affected interstate commerce by decreasing, however slightly, the overall demand for wheat).

104. *See* William Funk, *The* Lopez *Report*, 23 ADMIN. & REG. L. NEWS 1 (1998).

105. *See id.*

106. 514 U.S. 549 (1995) (striking down the Gun Free Schools Act of 1990, which criminalized possession of a firearm within 1,000 feet of a school).

Clause.[107] As one commentator noted, "observers had generally come to believe that . . . while there might be a theoretical limit on Congress's power, there was no practical limit. *Lopez* proved that observation false."[108]

Naturally, the question following *Lopez* was whether other laws might fail to survive the Court's heightened Commerce Clause scrutiny. Was this the beginning of a conservative check on federal power,[109] or was it, as some have said about *Lucas v. South Carolina Coastal Council*,[110] "a decision full of sound and fury signifying nothing?"[111] The first clue came when Congress enacted the Gun-Free Schools Act of 1994, a modified version of the Act that the *Lopez* Court struck down, which denies federal financial assistance, under the Elementary and Secondary Education Act of 1965, to school districts that do not enact mandatory expulsion policies for students who bring firearms to school.[112] Faced with the possible loss of federal funds, states rushed to comply by enacting comparable legislation.[113] Congressional intent was satisfied despite *Lopez*.[114] Additionally, commentators who support a diminished role for the federal government in environmental protection cite *Printz v. United States*[115] and *New York v. United States*[116] for the proposition that the Court has begun restricting the power of Congress over state and local governments.[117] In reality, these cases merely proscribe one tool of regulation, Congress's ability to commandeer state governments and officials to regulate on its behalf.[118]

In *New York*, the Court struck down a portion of the Low-Level Radioactive Waste Policy Amendments, which required states in certain circumstances to take title and assume liability for waste

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107. *See, e.g.*, Baker, *supra* note 31, at 1911; Funk, *supra* note 104, at 1.

108. Funk, *supra* note 104, at 1.

109. *See* Linehan, *supra* note 16, at 413.

110. 505 U.S. 1003 (1992) (requiring compensation for regulatory takings).

111. Glenn P. Sugameli, *Takings Issues in Light of* Lucas v. South Carolina Coastal Council*: A Decision Full of Sound and Fury Signifying Nothing*, 12 VA. ENVTL. L.J. 439 (1993).

112. *See* 20 U.S.C. § 3351 (1994).

113. *See* Mary Pat Daviet, *Police Officers in Public Schools: What Are The Rules?* 27 COLO. LAW. 79 (Nov. 1998).

114. Federal courts of appeal have cited *Lopez* more than 400 times and reviewed *Lopez*-based challenges to some forty federal laws. *See* Funk, *supra* note 104, at 14. As of June 1998, however, the case played a role in striking down only three federal actions, and all were essentially criminal cases. *See id.*

115. 521 U.S. 898 (1997).

116. 505 U.S. 144 (1992).

117. *See* Adler, *supra* note 16, at 586.

118. *See* Roderick M. Hills, Jr., *The Political Economy of Cooperative Federalism: Why State Autonomy Makes Sense and "Dual Sovereignty" Doesn't*, 96 MICH. L. REV. 813, 824 (1998).

generated within its borders.[119] The essence of the *New York* holding is that the federal government cannot force the states to adopt or administer a federal regulatory program.[120] Importantly, Justice O'Connor's opinion let stand another provision of the act that established fiscal incentives in the form of subsidies and waste disposal surcharges.[121] While Congress may not directly commandeer state legislative processes, it can employ other means to achieve its goals. "The Constitution enables the Federal Government to pre-empt state regulation contrary to federal interests, and it permits the Federal Government to hold out incentives to the States as a means of encouraging them to adopt suggested regulatory schemes."[122]

The *New York* Court thus endorsed two primary means through which a national land use strategy could be enacted. By reaffirming *South Dakota v. Dole*,[123] the Court upheld the government's right to attach conditions to federal funds. Moreover, it reaffirmed the "cooperative federalism" model of many modern environmental laws. Congress can give states a choice of "regulating that activity according to federal standards or having state law pre-empted by federal regulation."[124] In addition, the *Printz* decision struck down a portion of the Brady Act, which in pertinent part required local officials to perform background checks on would-be

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119. *See* Pub. L. No. 99-240, 99 Stat. 1842 (1985) (codified at 42 U.S.C. §§ 2021-21b (1994)).

120. *See New York*, 505 U.S. at 188.

121. *See* Adler, *supra* note 16, at 586.

122. *New York*, 505 U.S. at 188. By allowing state and local governments to refuse to enact and administer a national program even if the federal government provides funding, *New York* makes states the master of their regulatory processes. In other words, *New York* gives nonfederal governments something to sell, the right to hold out for a higher price. *See* Hills, *supra* note 118, at 856.

123. 483 U.S. 203 (1987) (conditioning receipt of federal funds upon states' adoption of a minimum drinking age). Justice O'Connor's endorsement of the *Dole* principle is interesting in light of her dissent in that case, but it is indicative of the widespread acceptance of spending clause conditions. "First under Congress' spending power, 'Congress may attach conditions on the receipt of federal funds.' Such conditions must . . . bear some relationship to the purpose of the federal spending, otherwise, of course, the spending power could render academic the Constitution's other grants and limits of federal authority." *New York*, 505 U.S. at 167 (citations omitted).

124. *New York*, 505 U.S. at 167 (citing Hodel v. Virginia Surface Mining & Reclamation Ass'n, Inc., 452 U.S. 264, 288 (1981)). Conditioned funds play a role in the Clean Air Act Amendments of 1990, the Transportation Equity Act for the 21st Century (TEA-21), and the new Clinton-Gore Livability Agenda. *See Clinton-Gore*, *supra* note 13. Cooperative federalist models, which regulate more directly, are evidenced by the Clean Air Act again and by the Coastal Zone Management Act. *See* 42 U.S.C. § 7401 (1999); 16 U.S.C. §§ 1451-65 (1997).

gun purchasers.[125] *Printz* merely extends *New York*'s rule against conscripting state legislatures to include state officials.[126]

Printz and *New York* established a doctrine of state autonomy that "*costlessly* promotes federalism by distributing power to nonfederal governments without impeding any useful national programs."[127] By entitling state and local governments to withhold their services from the federal government, *Printz* and *New York* "enhance the bargaining position of such governments and allow them to extract a degree of discretion or revenue for the implementation of federal law that such governments would otherwise lack."[128] Taken together, *Printz, New York,* and *Lopez* suggest the Court may view new federal incursions into state affairs with a higher level of scrutiny; this has obvious implications for a national growth management strategy. Viewed separately, the cases are of limited importance to planners because, as many commentators have noted, the Spending Clause offers Congress a constitutionally-valid means of achieving its desired ends.[129] The Court's approach pays deference to state autonomy while preserving the federal government's ability to enlist state assistance in achieving public interest goals.

> [T]his grant of power to state and local governments is essentially costless, because the national government easily can use its spending power to reclaim the power granted to non federal governments . . . to assist the national government.
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> …
>
> [T]he national government has no need to commandeer state or local governments' regulatory processes, because Congress easily can purchase those

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125. *See* Printz v. United States, 521 U.S. 898 (1997); *see also* Pub. L. No. 90-618, 82 Stat. 1213 (1968) (codified as amended at 18 U.S.C. §§ 921-25 (1994)).

126. *See Printz*, 521 U.S. at 898 (1997). Justice Scalia's majority opinion was joined by Chief Justice Rehnquist and Justices O'Connor, Kennedy, and Thomas. Justices Stevens, Breyer, Ginsburg, and Souter dissented. Souter's dissent is noteworthy because he joined the majority in *New York* yet nonetheless found the background check at issue here permissible. This illustrates further the narrow scope of these rulings.

127. Hills, *supra* note 118, at 856 (emphasis in original).

128. *Id.* at 943.

129. *See id.*; *see also* Baker, *supra* note 31, at 1914 ("prevailing Spending Clause doctrine appears to vitiate much of the import of *Lopez* and any progeny it may have"); Adler, *supra* note 16, at 617 ("[I]nsofar as Congress' spending power is not subject to constitutional constraints, it threatens to swallow whole the state sovereignty protected by *Printz*.").

> processes through its spending powers supplemented with its power of conditional preemption.[130]

Just how much power Congress retains to impact state and local affairs under the current doctrine becomes clear after a review of Spending Clause jurisprudence.

B. The Spending Clause

Article I, Section 8 of the Constitution gives Congress the broad power to "provide for the common Defense and general Welfare of the United States."[131] As the Court held in *United States v. Butler*, Congress's prerogative "to authorize expenditure of public moneys for public purposes is not limited by the direct grants of legislative power found in the Constitution."[132] General welfare is a broad term, and the Court has held that it "should defer substantially to the judgment of Congress"[133] in determining what issues fall within its scope. Indeed the Court further queried "whether 'general welfare' is a judicially enforceable restriction at all."[134] In *Oklahoma v. United States Civil Service Commission*,[135] the Court rejected a challenge to a condition on federal highway grants, observing that the Tenth Amendment "has been consistently construed 'as not depriving the national government of authority to resort to all means for the exercise of a granted power which are appropriate and plainly adapted to the permitted end.'"[136] The state's remedy, which in fact it exercised, was to choose "the 'simple expedient' of not yielding to what [it] . . . urges is federal coercion."[137]

Spending Clause jurisprudence was barren for forty years until *South Dakota v. Dole*, which reaffirmed that "objectives not thought to be within Article I's 'enumerated legislative fields' may nevertheless be attained through the use of the spending power and the conditional grant of federal funds."[138] In *Dole*, the Court upheld

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130. Hills, *supra* note 118, at 857.
131. U.S. CONST. art. I § 8, cl. 1.
132. United States v. Butler, 297 U.S. 1, 66 (1935).
133. South Dakota v. Dole, 483 U.S. 203, 207 (1987).
134. *Id.* at 207 n.2 (citing Buckley v. Valeo, 424 U.S. 1, 90-91 (1976) (per curiam)).
135. 330 U.S. 127 (1947).
136. *Id.* at 143 (quoting United States v. Darby, 312 U.S. 100, 124 (1941)).
137. *Id.* at 143-44.
138. *Dole*, 483 U.S. at 207 (citing United States v. Butler, 297 U.S. 1, 65-66 (1936) (citations omitted)). Ironically, the *Dole* opinion was written by Justice Rehnquist, the author of *Lopez*, and generally an advocate of states' rights.

a federal statute that withheld a portion of highway funds unless states limited the sale and possession of alcohol to people twenty-one years of age or older.[139] Such legislation was "within constitutional bounds even if Congress may not regulate drinking ages directly."[140]

Occasionally, the Court has expressed reservations about the scope of the spending power, prompting some to suggest that the Court may one day restrict its use.[141] Noting that "[t]he spending power is of course not unlimited . . . but is instead subject to several general restrictions articulated in our cases," the *Dole* Court outlined a four-part test governing conditional spending.[142] First, Congressional spending power must be in pursuit of "the general welfare."[143] Second, if Congress ties the receipt of federal funds to certain conditions, it must do so clearly and unambiguously.[144] Third, these conditions must be related to the federal interests sought in the program.[145] Finally, conditional funding must comply with other constitutional limitations.[146]

Applying the test to the facts, the *Dole* Court quickly disposed of the first three requirements, finding that the drinking age served the general welfare, was clearly articulated, and related to the national interest in highway safety.[147] The Court declined to address whether conditions less closely related to the purpose of the expenditure would fall within the bounds of the spending power.[148] As one commentator noted, the court gave none of the four restrictions much "bite."[149]

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139. *See id.* at 205.

140. *Id.* at 206. Even today it is unclear whether Congressional regulation of drinking ages was Constitutional in light of the Twenty-First Amendment. *See* Baker, *supra* note 31, at 1929 n.84. Without that amendment, however, regulation of drinking ages to prevent so-called "blood-borders," where underage drinkers travel across state lines to buy alcohol, would likely pass muster under the Commerce Clause.

141. *See, e.g.*, Baker, *supra* note 31, at 1916; Adler, *supra* note 16, at 625. For example, while acknowledging the scope of the Spending Power, the *Butler* Court nonetheless struck down the legislation at issue there as violative of the Tenth Amendment. *See* United States v. Butler, 297 U.S. 1, 68 (1936); *see also* Baker, *supra* note 31, at 1927 ("In *Butler*, the Court thus acknowledged, and sought to disable, the potential of the Spending Clause to 'nullify all constitutional limitations upon [congressional] power.'").

142. *Dole*, 483 U.S. at 207.

143. *Id.* ("In considering whether a particular expenditure is intended to serve general public purposes, courts should defer substantially to the judgment of Congress.").

144. *See id.* (quoting Pennhurst State Sch. & Hosp. v. Halderman, 451 U.S. 1, 17 (1981)).

145. *See id.* (quoting Massachusetts v. United States, 435 U.S. 444, 461 (1978) (plurality opinion)).

146. *See id.* at 208.

147. *See Dole*, 483 U.S. at 208-09.

148. *See id.* at 209 n.3.

149. Baker, *supra* note 31, at 1929.

In light of the Tenth Amendment, the final test could have been problematic to the argument that Congress should use the Spending Clause to condition the use of funds related to growth management, but the Court held the "independent constitutional bar" language was not a "prohibition on the indirect achievement of objectives which Congress is not empowered to achieve directly."[150] The Court did note, however, that there might be "some circumstances [where] the financial inducement offered by Congress might be so coercive as to pass the point at which 'pressure turns into compulsion.'"[151] Losing five percent of federal highway funds was a "relatively mild encouragement" that fell below that level of coercion.[152] As Justice Cardozo noted, determining when an inducement rises to the level of coercion depends on facts and degree.[153] Often, Congress sets the incentive at "just the 'right' level . . . and, accordingly, no state tends very long to resist."[154]

C. Conditional Federal Spending

Many forms of conditional grant systems exist, but their essence is simple: Congress provides funds to the states on the condition that they use the money to achieve federal priorities.[155] One commentator has described a two-step grant process of origination and bargaining.[156] The origination stage concerns the drafting and enactment of grant legislation, a process that involves considerable lobbying by nonfederal governments and their representative coalitions, as well as rival states and public interest groups.[157] The bargaining stage occurs when individual states decide whether to participate in the program and accept the

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150. *Dole*, 483 U.S. at 210 ("[W]e think that the language in our earlier opinions stands for the unexceptional proposition that the power may not be used to induce the States to engage in activities that would themselves be unconstitutional.").

151. *Id.* at 211 (quoting Steward Machine Co. v. Davis, 301 U.S. 548, 590 (1937)).

152. *Id.*

153. *See Federalism, Political Accountability, and the Spending Clause*, *supra* note 88, at 1431 (citing Steward Machine Co. v. Davis, 301 U.S. 548, 590 (1937)).

154. William Van Alstyne, *"Thirty Pieces of Silver" for the Rights of Your People: Irresistible Offers Reconsidered as a Matter of State Constitutional Law*, 16 HARV. J.L. & PUB. POL'Y 303, 320 (1993).

155. *See* Hills, *supra* note 118, at 859.

156. *See id.* at 860.

157. *See id.* at 860 ("In response to such pressures, Congress may impose various substantive conditions on both the federal grant money and preexisting state funds to ensure the federal grant is spent for specified classes of beneficiaries or specified federal purposes. Congress may also demand that state agencies responsible for spending the federal revenue comply with various structural or procedural requirements ....").

conditions in exchange for money.[158] Even in cases where the funding formula is specified, states and localities bargain with federal agencies over the meaning and enforcement of the conditions.[159] Members of Congress often intervene on behalf of nonfederal governments in the application and enforcement processes to achieve favorable treatment for their constituencies.[160]

> Conditional grants-in-aid, therefore, resemble fee-for-service contracts under which the national government provides nonsource revenue resembling "fees" in return for state-provided services. Assuming that the state and local governments possess the . . . entitlement, each nonfederal government can independently decide whether to proffer the requested services for the tendered "price."[161]

Some argue that this independence is illusory because states have little choice but to accept the funds and conditions;[162] however, this dim view of state choice lacks empirical support.[163] Commentators cite widespread state participation in conditional spending programs as evidence of the programs' coercive effect,[164] but this proves nothing. "[S]tate and local willingness to sell services might mean only that Congress has made a correct estimate of the nonfederal governments' opportunity costs of providing the requested services."[165]

State governments will usually decline conditional grants when opportunity costs exceed the benefits of compliance.[166] For example, Arizona initially declined to participate in Medicare because the costs of providing health care to Native Americans

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158. *See id.* at 861.

159. *See id.*

160. *See id*.

161. *Id.*

162. *See, e.g*., Baker, *supra* note 31, at 191; Thomas R. McCoy & Barry Friedman, *Conditional Spending: Federalism's Trojan Horse*, 1989 SUP. CT. REV. 85, 100-01; Van Alstyne, *supra* note 154, *passim*.

163. *See* Hills, *supra* note 118, at 862.

164. *See* McCoy & Friedman, *supra* note 162, at 119-20.

165. Hills, *supra* note 118, at 862. (noting that since "Congress designs the grant package with input from nonfederal governments and their organizations, such as the National League of Cities and the National Governors' Association . . . it should not be surprising that, when Congress actually offers the grant, nonfederal governments accept it. One might as well argue that one coerces storeowners by buying their products because, when one presents the requested price for a product, the sales clerk invariably hands over the product.").

166. *See id.* at 862-63.

exceeded the benefit.[167] Also, more than half the states declined federal funding under the Occupational Safety and Health Act of 1970.[168] States may consider some federal conditions on funding to be meddlesome and manipulative; however:

> overblown statements about the "coerciveness" of federal grant conditions require a more careful analysis of what is meant by "coercion." There does not seem to be any *a priori* reason to believe that state and local governments are any more coerced by such conditions than any other federal contractor who is required to provide services in return for payment of federal monies.[169]

Whatever the policy arguments, the Court's current position is that conditional spending programs do not violate the Tenth Amendment provided states have some opportunity to "opt out" of the program.[170] Indeed, what few cases exist on the subject offer states a simple choice: take the conditions or forego the money.[171] Therefore, it will take more than rhetoric to make the case that grants are inherently coercive.

The Supreme Court has never held unconstitutional a conditional grant to state or local governments.[172] In fact, as one observer notes, "if political realities protect the states against the extreme cases of federal interference, judicial intervention may not be necessary."[173] Although it may be possible to hypothesize a coercive federal grant, the fact that none have yet met the Court's disfavor indicates its reluctance to intervene.

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167. *Id*.

168. *See id*. at 863.

169. *Id*. at 864.

170. *See* Kristian D. Whitten, *Conditional Federal Spending and the States "Free Exercise" of the Tenth Amendment*, 21 CAMPBELL L. REV. 5, 25 (1998).

171. *See, e.g.*, South Dakota v. Dole, 483 U.S. 203, 207 (1987); Oklahoma v. United States Civil Serv. Comm'n, 330 U.S. 127, 143-44 (1947); Massachusetts v. Mellon, 262 U.S. 447, 482 (1923).

172. *See* Albert J. Rosenthal, *Conditional Spending and the Constitution*, 39 STAN. L. REV. 1103 (1987).

173. *Id.* at 1163. The Supreme Court's position also seems to be that judicial interpretation is unnecessary. *See* Garcia v. San Antonio Metro. Transit Auth., 469 U.S. 528, 551-55 (1985).

V. NATIONAL INCENTIVES FOR SMARTER GROWTH

Given the litany of federal programs that have contributed to poor land use, one might wonder why we should look to the federal government for solutions. It is precisely because of the historic federal role in land use, however, that federal solutions are needed. What was done once can be done again, but this time with the knowledge that comes from a century of experience and advancement in ecological understanding. The present task is to identify how national policies may be tailored within the bounds of the law to serve a new agenda. For too long, the nation has served development; now, development must serve the nation.

> Smart growth is development intended to serve economy, environment and community. Smart growth is characterized by inclusive decision-making, locational decisions and site designs for development that minimize environmental and fiscal impacts, long-term strategic local and regional land use planning, and the use of regulatory and market incentives to promote more livable communities and minimize the impacts of sprawl.[174]

The federal government should not and probably could not attempt a national zoning regime; many important decisions must be made at the local level. No scheme can hope to succeed without the creative input and support of local people.[175] Federal and state governments, nonetheless, can play a critical role as facilitators of community planning by providing technical assistance, guidelines, and funding.[176] In this way, Congress can foster and reward smart growth initiatives and, over time, shift incentives away from sprawl development.[177] Although smart growth initiatives at the federal level are still in their infancy, some worthy first steps have been taken in this direction.[178]

The federal government is playing a significant role in facilitating dialogue on growth management. Established in 1993, the President's Council on Sustainable Development (PCSD) has

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174. Ward, *supra* note 11, at 326.
175. *See* Turner & Rylander, *supra* note 19, at 67.
176. *See id.*
177. *See* Ward, *supra* note 11, at 326.
178. *See id.*

been conducting a national conversation on sprawl issues.[179] The PCSD's most recent report, *Sustainable America*, recommended a policy "to manage the geographical growth of existing communities and siting of new ones to decrease sprawl, conserve open space, respect nature's carrying capacity and provide protection from natural hazards."[180] Working with the National Association of Counties and the U.S. Conference of Mayors, PCSD created the Joint Center for Sustainable Communities, which encourages cooperation between municipalities on regional growth issues.[181]

The "Smart Growth Network" of the Environmental Protection Agency (EPA) is bringing planners, government officials, developers, and activists together to promote responsible land use.[182] Through its Sustainable Development Challenge Grant program, the EPA awarded $5 million dollars in 1998 to local governments working on regional governance and metropolitan transportation issues.[183] The EPA is also funding brownfield redevelopment projects, providing more than 120 grants of $200,000 each to help localities build partnerships and test new redevelopment techniques.[184] Combined with its Brownfields Action Agenda, which alters the Superfund liability scheme to promote urban redevelopment, the EPA has helped focus attention on the problem of wasted urban land and encourage private developers to reclaim abandoned industrial property.[185]

Cooperation between federal, state, and local governments is difficult, but there are some models for integrating policies to improve land use. The Coastal Zone Management Act (CZMA) provides federal funding and guidelines for states to develop coastal management plans tailored to fit their specific needs.[186] Subsequent federal programs must comply with the approved state plans.[187] Although the states were skeptical at first, nearly all of the thirty-five

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179. *See* The President's Council on Sustainable Development, *Sustainable America: A New Consensus for the Prosperity, Opportunity and a Healthy Environment for the Future* (Feb. 8, 2000) <http://www.whitehouse.gov/PCSD/Publications/TF_Reports/amer-top.html>.

180. *Id.* (noting that "[t]he federal government should redirect federal policies that encourage low-density sprawl to foster investment in existing communities. It should encourage shifts in transportation spending toward transit, highway maintenance and repair, and expansion of transit options rather than new highway or beltway construction.").

181. *See* Ward, *supra* note 11, at 327.

182. *See id.*

183. *See id.*

184. *See id.*

185. *See id.*

186. *See* Coastal Zone Management Act of 1972, 156 U.S.C. §§ 1451-65 (1997).

187. *See id.* § 1456(c).

eligible states eventually signed on, while the breadth and scope of their respective plans vary.[188] The Coastal Barriers Resources Act "avoids regulatory mandates but offers powerful disincentives by denying federal funds for roads, sewer plants, water systems, and flood insurance to developments that locate in sensitive coastal areas."[189] Provisions in the Clean Air Act and Clean Water Act could also be tailored to foster better local growth patterns.[190]

Highway projects dominate congressional spending, as evidenced by the more than $200 billion in federal funds appropriated each year.[191] Mass transit is inefficient only because the entire American transportation system has been designed to accommodate the car.[192] Breaking with the past, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), set out "to develop a National Intermodal Transportation System that is economically efficient, environmentally sound, provides the foundation for the United States to compete in the global economy, and will move individuals and property in an energy efficient way."[193] ISTEA provided the first explicit link between transportation planning and local environmental and recreational needs, supplying funds for greenways, bike trails, and regional planning.[194] ISTEA's successor, the Transportation Equity Act for the Twenty-first Century (TEA-21), builds upon the innovative provisions of ISTEA and provides flexibility for localities to shift highway monies to congestion abatement projects, including growth management and alternative transportation.[195]

Additionally, Congress has other tools at its disposal to influence the land use decision-making process. Federal tax policies could be aimed at reducing traffic, emissions, and the development of sensitive areas.[196] Also, economic development incentives targeted at inner cities provide another tool for encouraging in-fill development and reuse of urban land.[197]

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188. For an excellent discussion of CZMA, see TIMOTHY BEATLEY ET AL., AN INTRODUCTION TO COASTAL ZONE MANAGEMENT (1994).

189. Turner & Rylander, *supra* note 19, at 68.

190. *See* Ward, *supra* note 11, at 327-28.

191. *See id.* at 328.

192. *See, e.g.*, Turner & Rylander, *supra* note 19, at 64; KUNSTLER, *supra* note 45, at 90.

193. 49 U.S.C. § 5501(a) (1997).

194. *See* Turner & Rylander, *supra* note 19, at 68.

195. *See* Ward, *supra* note 11, at 327-28.

196. *See id.* at 329.

197. *See id.* Examples of federal economic development incentives include: the Empowerment Zones and Enterprise Communities Program, administered by the Department of Housing and Urban Development; the HUBZones program, administered by the Small

These options offer a few examples of new and innovative federal programs that could help stem the tide of sprawl, but these efforts would still be outweighed by existing funding streams that exacerbate sprawl.[198] Nonetheless, they are critical first steps that suggest a possible path toward a coordinated pro-active federal role in growth management. The Livability Agenda is yet another initiative aimed at increasing the federal role in growth management.

VI. CONCLUSION

The Livability Agenda, while far from comprehensive, is the most sweeping smart growth initiative ever proposed at the federal level.[199] Notably, the Livability Agenda provides that:

> The way we build and develop determines whether economic growth comes at the expense of community and family life, or enhances it. Now, we have seen a new vision of how to build and plan better -- so that a strong economy energizes the strong neighborhoods that support strong families. By helping communities pursue smarter growth, we can build an America for our children that is not just better off -- but better.[200]

A harbinger of things to come, the Livability Agenda represents a cresting wave of political activism rising up from communities across the country to reclaim towns and cities from the uniformity of sprawl.

It remains to be seen, however, if the Livability Agenda marks the starting point for federal involvement in shaping America's growth patterns or a dénouement with no lasting currency. Almost daily, however, the national press focuses on the impacts of sprawl. Land use concerns resonate in communities across the country, and with this new livability initiative, sprawl may now become a federal issue.

As Congress looks to fashion environmental laws that meet the challenges of this new century, land use will play a prominent role. Progress in water quality now depends on stemming non-point

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Business Administration; and the Location Efficient Mortgage program, launched jointly in 1998 by EPA and Fannie Mae, the federal mortgage lending company. *See id.*

198. *See* Ward, *supra* note 11, at 327.

199. *See id.*

200. Gore, *supra* note 1.

source pollution, the extent of which is determined by land use patterns. Likewise, further improvements in air quality will depend on reducing congestion, vehicle miles traveled, and fostering transit-oriented development patterns. Protection of parks and wildlife habitats also depends on reducing land fragmentation caused by sprawl. All these factors point to the burgeoning national interest in the way people use land in their communities.

Forging a comprehensive, effective, and community-sensitive federal land use policy will not be easy, but many tools and models now exist to guide development of a national land use agenda. The states have tried and tested numerous growth management schemes. Consequently, more is now known about the promises and pitfalls of such designs than in the early 1970s when a national land use program was first proposed. Despite the rhetoric of the new "federalist revival," the Supreme Court has imposed only modest limitations on the government's ability to regulate in the national interest. The Court's recent cases pay homage to founding principles while retaining modern flexibility. Direct federal growth management legislation would likely pass constitutional muster, especially if the statute created a voluntary, state-implemented, federally-funded regime similar to the Coastal Zone Management Act. Furthermore, the Spending Clause permits Congress to condition funds and establish block grants to achieve aims that would be impermissible if mandated directly.

In constructing a new land use agenda, Congress must be mindful of federalist concerns, but the national political process protects states in both the design and implementation stages of federal policy. States retain considerable bargaining power in deciding whether and how to accept conditions on federal funds. Moreover, since states are likely to be participants in whatever regulatory structure develops, any development agenda must be prepared with state input and the participants must reach politically viable agreements.

For good and ill, federal initiatives have long impacted land use. Perhaps the greatest obstacle to an effective federal land use program are the scores of existing programs, often conflicting in nature, that impact land use decision-making. Too many disconnected policies and overlapping jurisdictions have created a system without accountability. An audit of all federal programs that impact land use — including housing and transportation policies, environmental laws, economic development programs, and tax laws — is long overdue. With the information gleaned from such an

accounting, Congress could eliminate programs that contribute to inefficient land use and better coordinate useful programs to fit a national growth management strategy.

The goals for federal growth management are taking shape, as are the tools and many of the program models. The Livability Agenda and the vision outlined in the PCSD's report, *Sustainable America*, are excellent starts. The time has come to coordinate these efforts in a concerted, regionally-sensitive program to make the best use of land — America's scarcest and most important resource.

2000 RECOMMENDED WEB SITES FOR WETLANDS LAW

I. WES WHEELER*

Table of Contents

I. INTRODUCTION

The *Journal* is committed, through this annual web site review, to help its readers access the Internet as an integral and relatively economical means of conducting legal research. As noted in the following paragraphs, the amount of information has become so overwhelming that it is necessary to limit the scope of each review to a particular field or specialty of environmental or land use law. In 1999, the *Journal* focused on Ocean and Coastal Law, for 2000 we have chosen Wetlands Law.

This review is principally oriented to the Florida practitioner who needs access to the laws, rules, regulations, and forms required to comply with federal and Florida wetlands permitting. The review also contains academic references useful for more extended research

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and analysis in wetlands policy. By necessity, a certain level of Internet access proficiency by the reader is assumed, including the use of a personal computer or on-line terminal with a user friendly software interface that is capable of reading the text and graphics of modern web sites. Further, it is assumed the reader is aware of "point and click" techniques and knows how to type in a web site Uniform Resource Locater (URL), if needed.

Internet sources that do not charge a subscription are the focus of this review. Thus the two most significant and effective sources of legal information, Westlaw <www.westlaw.com> and Lexis <www.lexis.com>, or alternative subscription services, are not described. Nor does this review recommend any particular research method, source or site. The article highlights several sites that have free sources of public information useful for legal analysis and that often have hyperlinks to other similar free sources. Several leading commentators on Florida legal research have noted the wide range in availability and quality of information and the search mechanisms to find it.[1] Do not assume the information you find is either accurate or current.[2] "Because commercial vendors are concerned with keeping their good names, their sites are generally reliable; official government sites are also considered as reliable as paper sources."[3] With that advice, and with the assistance of The Florida State University College of Law Head Reference Librarian Mary McCormick, this web site review is structured to include the major reliable legal reference and government sites. Although the included list is by no means exhaustive, it does include the basics of interest to most practitioners and academics.

As the use of the World Wide Web has exploded in recent years, the major task of "net surfers" has become one of sifting through the chaff to get to the wheat. Using a standard text search engine, such as AltaVista <www.altavista.com>, a search for "wetlands" turned up 238,065 "hits" on March 31, 2000. On May 1, 2000 (the span of one month), that number had increased to 273,550 hits. This review narrows the scope of surfing significantly by listing a subset of sites that have much of the readily available general background information needed for legal analysis. This background information also provides an excellent starting point for further research, should

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1. *See* SUZANNE ROWE ET AL., FLORIDA LEGAL RESEARCH, at 154 (Carolina Academic Press, 1998).

2. *See id.*

3. *Id.*

the reader so desire. The addresses are categorized under various topic areas for easy reference. These topic areas are Federal Government Agencies and Organizations, Florida Government Agencies and Organizations, Non-profit and Other Activist Organizations, Libraries and Directories, and Magazines and Other Activist Organizations. This list is far from inclusive, but is meant to give a flavor for what is accessible though the Internet.

Each following sections contains the URL address for the specific page of information most useful for legal analysis at each web site, as of the date of this publication. As noted in several of the following sections, most of these web sites have links to related sites. And, unfortunately, these links are too often outdated. Particularly when dealing with several of the major federal sites, it will be useful to keep a copy of this text handy for more recent URLs. And when (not if) the addresses in this review become obsolete, the reader is encouraged to use the legal reference sites and search engines listed in the following section of this review.

II. DESIGNING A WEB SEARCH FOR LEGAL ANALYSIS

Given the staggering amount of information available on the Internet, any search for legal analysis must be carefully planned and structured. It is too easy to become lost in the maze; be sure to leave bread crumbs behind as you go. Before logging on and surfing the Net, you want to be sure to design a web search that will allow you to get what you need quickly and log out. This section reviews the basics of designing a web search for legal analysis including developing a research plan, accessing several of the better legal research sites to refine the plan, and using the plan to find and review web sites with relevant information to your search.

A. Developing a Legal Analysis Research Plan

In designing a legal research plan, one must consider primary sources (usually case law, statutes, and administrative rules), secondary materials (such as law review articles, legal encyclopedias, treatises, etc.), and search materials (e.g. legal indexes, including those available though online research).[4] For primary sources, the free Internet sites reviewed in this article do not have as thorough an indexing and compilation of case law as the subscription services.

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4. *See* HELENE SHAPO ET AL., WRITING AND ANALYSIS IN THE LAW, (3d ed., Foundation Press 1995).

Although cases may be available at some sites, particularly the Legal Information Institute <www.law.cornell.edu>, it may not be as economical or effective to use these as a primary source. Statutes and administrative rules, however, are available in abundance. Most government agency sites include a page with its enabling legislation and the agency's rules, or links to other sites that do have this information. If the information is a page, rather than a hyperlink, the reader is advised to check the official source site for statutes (the relevant legislative web site) and for administrative rules (e.g., the *Code of Federal Regulations*) for the most recent published version. As a note of comparison, the free sites' statutes are not annotated with case law, as is the case with the subscription services.

Secondary materials are also abundantly available through the free Internet sites. Government agencies include a wealth of information related to their respective missions and to assist citizens in complying with legal requirements. Non-profits and activist organizations are an excellent source of additional information and perspectives not available at the government sites. Although there is not a free separate searchable database of indexed law reviews or other legal periodicals, similar to the subscription services, many of these reviews and periodicals are now on-line. Legal encyclopedias, such as the A.L.R., are also now only available through subscription. Search materials are the means through which primary and secondary materials are found. There is a dizzying array of search options on the Internet, with a variety of general purpose "web crawlers" (text search engines) and several specialized legal tools. The more useful approach for legal analysis, however, is to start first with the specialized legal tools, thus this review includes descriptions for several of the better sites.

B. Legal Research Web Sites

- Law Library Resource Xchange
  URL: *http://www.llrx.com*

  A unique Web journal, LLRX.com has been published since 1996. There is no subscription fee for the journal, which is updated on the 1st and 15th of each month. The issues feature articles, departments, columns and extras by law librarians, attorneys, information technology specialists and legal technology consultants. The site is an excellent source for finding information on how to structure a web search and where to find the tools you need to do it. Included are timely articles on computer assisted legal research and has a "top ten search

engines" review. The "meta-links" page is an excellent listing of links to other legal research sites and thus is one of the best places to start a web search.

- The Virtual Chase
  URL: *http://www.virtualchase.com*

  The Virtual Chase, also published since 1996, has more than 500 pages of information pertaining to resources and research strategies. It is a web site designed especially for lawyers and other experienced legal researchers. The site is sponsored by the law firm Ballard Spahr Andrews & Ingersoll, LLP. The site has a wonderful Research Aids section, with separate pages such as "Legal Guide," "Court Rules Guide," "Company Guide," and "People Guide." The "Legal Guide" page has a comprehensive listing of other legal research sites, organized by type of law or topical area. This is another "must see" before beginning a web search.

- Legal Information Institute
  URL: *http://www.law.cornell.edu*

  Consistently sited by a number of other web sites as the source for primary materials. If you do not start here looking for a particular case or statute, you will likely visit here at some point in the research process to verify that the information obtained elsewhere is current. An excellent source of most federal and state statutes, rules, and court decisions.

- Quicklaw America Internet Law Library
  URL: *http://www.currentlegal.com/lawlibrary*

  A great legal research index site, with links to state, national, and international laws, statutes and rules. Links to several other very useful sites and search engines are listed in "Legal Portals on the Internet," including FindLaw, <www.findlaw.com>, which has a number of fascinating features, including "LawCrawler," a law specific search engine.

- Louisiana State University, U.S. Federal Government Agencies Directory
  URL: *http://www.lib.lsu.edu/gov/fedgov.html*

  Another site frequently mentioned, this directory includes every federal government agency, broken down into the following categories: Executive, Judicial, Legislative, Independent, Boards, Commissions, Committees, and Quasi-Official. An excellent starting point when tracking down accurate general information, which is often posted at these governmental sites.

- United States Government Printing Office
  URL: *http://www.access.gpo.gov*

  This is the official U.S. government web site for the most recent publication of the *United States Code*, *Code of Federal Regulations*, and the *Federal Register*. "Quick links" to each of those areas is included in the "GPO Products" page.

C. Using a Research Plan to Find and Review Web Sites

Having reviewed the process of organizing a web search, this review turns to the web sites that provide specific wetlands information. These sites are the starting point for basic general information and for finding links to more specialized specific interest. The emphasis of these reviews is to highlight the most important or interesting information relevant to legal analysis at each site.

III. FEDERAL GOVERNMENT AGENCIES AND ORGANIZATIONS

- Environmental Protection Agency (EPA), Office of Wetlands, Oceans, and Watersheds
  URL: *http://www.epa.gov/owow/wetlands*

  This site has a number of useful links to wetlands information. The site's major categories include "About the Wetlands Program, Facts About Wetlands," "The Interagency Wetlands Plan," "Laws, Regulations and Guidance," "Partnership: State, Tribal, Local and Other Initiatives," "Landowners Assistance and Stewardship," "Water Quality, Monitoring, & Assessment," "Wetlands & Watersheds," and "Science, Education & Information Resources." Other major site features include a

"New Announcements" button bar at the bottom of the page and a "Features" button on the right-hand margin.

Perhaps most useful for the practitioner are the "Laws, Regulations and Guidance" and "Partnership: State, Tribal, Local and Other Initiatives" links. The former includes the major federal legislation granting jurisdictional authority over wetlands, including Section 404 of the Clean Water Act and Section 10 of the Rivers & Harbors Appropriation Act of 1899; EPA and U.S. Army Corps of Engineers regulations implementing that legislation; and Agency Interpretive Guidance (including Inter-Agency Memorandums of Agreement) for those rules. Note that several of the links listed here are outdated, particularly links to the Corps sites. It might be helpful if the reader uses the Corps links listed below for Corps documents.

The "Partnership" link is a broad, thorough listing of wetlands related links. It is divided into eighteen categories that range from "EPA Resources" to "Watersheds." This site is an excellent resource for organizing a wetlands web site search. Many of the links, however, are outdated. In a series of e-mail messages between EPA personnel and this author, agency staff have acknowledged the problem and hope to be addressing in the near future.

- EPA Region 4 (serving Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee).
  URL: *http://www.epa.gov/region4/water/wetlands/links.html*

  In addition to much of the same basic information provided at the EPA's national wetlands site, the Region 4 site has a "wetlands menu." This menu includes: "Wetland's Home," "General Info," "Legislation and Policy," "Educational Materials," "Technical Materials," "Landowners Info," "Southeastern Projects," "Grant Programs," "State and Local Programs," "Other Approaches," and "Links".

  Particularly useful for the practitioner is the "General Info" page, which includes a list of contacts and the "Landowners Info" page, with links to southeastern state and local organizations involved in wetlands' preservation. The "links" page includes a number of Florida specific sites that may be of interest to the reader.

- EPA GMPO Gulf Estuaries Program
  URL: *http://pelican.gmpo.gov/gcnep.html*

  This site includes links to all of the U.S. EPA National Estuary Programs for the Gulf of Mexico, including the Tampa Bay, Sarasota Bay, Charlotte Harbor, Appalachicola, and Rookery Bay programs in Florida.

- U.S. Army Corps of Engineers, Headquarters, Regulatory Program
  URL: *http://www.usace.army.mil/inet/functions/cw/cecwo/reg/index2.htm*

  This is the single most useful web site for immediate accurate information on federal wetlands regulation. The URL given here takes the reader directly to the Corps' regulatory index page. This index contains an extensive listing, with the eight section headings including:

  1) Corps Regulatory Program Overview
  This section provides good background material for the reader who is unfamiliar with federal wetlands permitting, including a general discussion of the Corps' jurisdiction and the process of obtaining a permit;

  2) Regulatory Jurisdictional Boundaries & Offices
  Includes links to all Corps divisions and districts, including the South Atlantic Division and Jacksonville District Offices (the latter's site is described below);

  3) Current Corps Regulatory Announcements & Decisions
  This section includes recent announcements and administrative decisions;

  4) Statutory, Administrative & Judicial Materials
  Includes Section 404 of the Clean Water Act and the implementing Code of Federal Regulations (CFR) for the Corps (33 CFR) and EPA (40 CFR). Particularly useful are the administrative materials, which include Corps guidance and memoranda of understanding with other federal agencies on wetlands regulation;

5) Technical & Biological Resources
Particularly useful source of scientific information on wetlands identification and delineation for academics and other interested practitioners;

6) Related Federal Agency Links
Includes links to the other three major federal agencies (U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service). As with the EPA site discussed below, many of these links are outdated;

7) Other Agency Administrative Materials
Council of Environmental Quality guidelines for implementing the National Environmental Policy Act, and

8) Archives
Archival Material.

- U.S. Army Corps of Engineers, Jacksonville District
URL: *http://www.saj.usace.army.mil/permit/*

In addition to the basic statutory and administrative materials contained in the Corps headquarters site, the Jacksonville Office site has several very useful sources of information for the practitioner. The Permitting and Regulatory site at the given URL includes links to: "Regulations," "Application," "Types of Permits," "Permit Process," and "Public Notices."

Most useful for the legal practitioner is the "Application" link, which contains the joint Corps/Florida agencies wetlands permitting application form in a downloadable format. Please note that you should click on the "cancel" button if you are asked for security verification when downloading the pdf file. Another very useful source of information at this site is the "helpful hints" link under the "Permit Process" category, which provides advice and guidance to land owners seeking a wetlands permit.

- Department of the Interior, U.S. Fish & Wildlife Service, National Wetlands Inventory
URL: *http://www.nwi.fws.gov/*

This web site has several interesting features that this author has not found elsewhere. First is the access to map data for those users with advanced geographic analysis software. For those who do not, there are order forms for ordering hard copies of

wetlands maps from NWI. Also of interest is the Interactive Wetland Mapper, which allows the user to get a very general wetlands map of a given area (e.g. county, zip code, etc.) online. The most useful of this site's features, though is the "Other Related Sites," an excellent listing of wetlands web sites, most of which are current. One notable outdated link is the Environmental Law Institute (discussed under non-profits below).

- United States Department of Agricultural (USDA), National Resource Conservation Service (NRCS), Watersheds and Wetlands Division
  URL: *http://www.ftw.nrcs.usda.gov/programs.html*

  This page includes links to detailed information on three major USDA, NRCS wetlands programs: Conservation Compliance (Swampbuster), the Wetland Reserve Program, and the Wildlife Incentives Habitat Program. These are very important programs for agricultural landowners whose property includes wetlands.

- USDA / NRCS Conservation Program Summaries
  URL: *http://www.nrcs.usda.gov/NRCSProg.html*

  This site contains links to very brief descriptions of all the NRCS programs, including the three wetlands programs listed above and several other environmental or conservation programs.

- USDA / NRCS 1996 Farm Bill
  URL: *http://www.nhq.nrcs.usda.gov/OPA/FB96OPA/MiscFB.html*

  This NRCS site highlights changes to the USDA, NRCS wetlands programs. It includes fact sheets on the wetlands programs listed above and on the USDA Farm Service Agency (FSA) wetlands conservation programs listed below.

- USDA / FSA Conservation Reserve Program
  URL: *http://www.fsa.usda.gov/dafp/cepd/crpinfo.htm*

  This Farm Service web site includes links to the Conservation Reserve Program and the Conservation Reserve Enhancement Program, two more very important wetlands preservation programs for agricultural landowners.

- USDA / NRCS / United States Geological Survey (USGS), Wetland Science Institute
  URL: *http://www.pwrc.usgs.gov/wli/*

  An excellent source for scientific information on wetlands assessment, delineation and restoration (separate links for pages containing files in each of those respective areas).

- USDA / NRCS / USGS, National Wetlands Research Center
  URL: *http://www.nwrc.gov/*

  Another good source for wetlands science information. The home page includes links to publications and a library that includes searchable databases.

IV. FLORIDA GOVERNMENT

- Florida Access to Government – State, County, and Local Government Links
  URL: *http://www.state.fl.us/fgsd_html/access.html*

  A "must have" bookmark for Florida practitioners and academics. Includes links to web sites for the Legislature, all state agencies, state commissions, the water management districts, counties and cities. If it is a Florida government entity on the web, you can find it here.

- The Florida Legislature
  URL: *http://www.leg.state.fl.us*

  An excellent text searchable site of the most recent Florida statutes. Also includes the status of bills in the current and several past sessions.

- Department of Environmental Protection (DEP), Bureau of Submerged Lands and Environmental Resources (SLERP)
  URL: *http://www.dep.state.fl.us/water/slerp/bsler/default.htm*

  This page describes the several environmental protection programs of the Bureau, including the Environmental Resource Permit Program (ERP).

- DEP, SLERP, Environmental Resource Program Description
  URL: *http://www.dep.state.fl.us/water/slerp/pds/erp.htm*

  This page describes the ERP program and includes links to other pages that provide more information on wetlands and ERP permits. A very useful site for background information on wetland resource permitting in Florida.

- DEP, Environmental Resource Permit Forms:
  URL: *http://www.dep.state.fl.us/water/slerp/pds/forms.htm*

  This page includes downloadable files (in pdf or Word format) for ERP applications. This page is part of Florida s "One-Stop Permitting System" (OSPREY) <osprey.dep.state.fl.us> . DEP s OSPREY page also includes a link to a page that will allow an applicant to track the status of her permit.

- State of Florida One Stop Permitting System (OSPREY)
  URL: *http://permitting.state.fl.us*

  This site includes a list of links by permit type for all the Florida agencies participating in the system. All of the agencies issuing ERPs are included in this system (DEP and four of the five water management districts).

- DEP, Office of General Counsel
  URL: *http://www.dep.state.fl.us/ogc/documents/statutes/statutelist.htm* (statutes)
  http://www.dep.state.fl.us/ogc/documents/rules/mainrule.htm (rules)

  These two sites contain all of the statutes and rules enforced and administered by DEP. A very useful site for looking up enabling legislation and applicable rules. Each is available in a downloadable pdf or Word file format.

- Southwest Florida Water Management District, OSPREY Information
  URL: *http://www.swfwmd.state.fl.us/osp/permits.htm*

  This web site page includes links to documents that describe the District's permitting process, including ERPs. These documents

include instructions on how to obtain an ERP and includes a downloadable ERP application. A very useful site.

- South Florida Water Management District, Environmental Resource Permits
  URL: *http://www.sfwmd.gov/org/reg/reg_erp.html*

  Describes the District's ERP program

  URL: *http://www.sfwmd.gov/org/reg/reg_rules.html*

  A downloadable file of the ERP rules.

- St. John's River Water Management District, Environmental Resource Permits
  URL: *http://sjr.state.fl.us/permit/permit_2.html*

  Describes the District's ERP program.

  URL: *http://sjr.state.fl.us/index4.html*

  A downloadable file of the ERP application.

- Suwannee River Water Management District, Environmental Resource Permits
  URL: *http://www.srwmd.state.fl.us/permitting/erp.html*

  This well designed site includes links to the District's rules, an ERP handbook and a downloadable ERP application form.

V. NON-GOVERNMENTAL ORGANIZATIONS

- The Association of State Wetlands Managers, Inc.
  URL: *http://www.aswm.org*

  This site has several interesting features, including the option to sign up for a "breaking news" about wetlands and a great "Related Links" page.

- Society of Wetlands Scientists
  URL: *http://www.sws.org*

  An informative site, with a useful link to text search past publications of the Society's Journal, *Wetlands.*

- Local Government Environmental Assistance Network
  URL: *http://www.lgean.org*

  A local government oriented site with a searchable database that includes links and documents on wetlands.

- National Wildlife Federation-Wetlands
  URL: *http://www.nwf.org/nwf/wetlands/index.html*

  This site includes information on the NWF's Everglades restoration project.

- American Farmland Trust
  URL: *http://www.farmland.org*

  An agriculturally oriented site that promotes conservation of farmland, including the wetlands that exist on those lands. Advocates environmentally friendly farming. Includes a search engine for the site that can be applied web-wide.

- National Wetlands Conservation Alliance
  URL: *http://users.erols.com/wetlandg*

  This web site includes information on the Alliance, an informal partnership of private organizations and government agencies working to facilitate voluntary landowner wetlands restoration, enhancement and conservation.

VI. NEWSLETTERS

- National Audubon Society, "Wetlands Campaign"
  URL: *http://www.audubon.org/campaign/wetland*

  This site advocates local community involvement in protecting wetlands. The site includes links to "Action Alerts" and the Saving Wetlands newsletter.

- Sierra Club
  URL: *http://www.sierraclub.org/planet*

  This site includes a number of interesting links. The search function pulls up wetlands related fact sheets and articles from the Sierra Club's The Planet newsletter .

- The Environmental Law Institute
  URL: *http://www.eli.org*

  This site includes links to the National Wetlands Newsletter, the *Environmental Law Reporter* and "This Week in Environmental Law." Although the first two items are by subscription, the reader can search the web site to check on past issues of interest. Also available is the option to subscribe through submitting at the web site.

- Louisiana Coastal Restoration Web Site
  URL: *http://www.lacoast.gov/Programs/CWPPRA/Watermarks/Index.htm*

  This site includes several interesting features, including a link to the Watermarks newsletter.

VII. UNIVERSITIES, LIBRARIES AND DIRECTORIES

The general search engine sites listed at the beginning of this review contain excellent general legal references useful for structuring a wetlands research plan. However, many universities have web sites that mention "wetlands" as well. This section only mentions those sites that have information not already covered elsewhere and are of interest to Florida practitioners.

- Amazing Environmental Organization Web Directory
  URL: *http://www.webdirectory.com*

  Although not quite as amazing as the title implies, this web site nonetheless has a number of searchable categories that may be useful to the reader.

- Center for Wetlands at University of Florida
  URL: *http://www.enveng.ufl.edu/wetlands*

  This interesting site has four major sections: wetlands ecology, ecological engineering, environmental policy, and a wetlands database. The database is text searchable. The site map includes several highlighted areas of interest, such as links to other Florida sites and information on the Center and its staff.

- Institute for Coastal and Estuarine Research at the University of West Florida
  URL: *http://www.uwf.edu/icer/*

  This web site includes information on the Institute and a very good "links" page, found at http://www.uwf.edu/~icer/links/Additional_Links.html.

- Texas Wetland Information Network (WetNet)
  URL: *http://www.glo.state.tx.us/wetnet*

  This site has several useful features, including a great "Wetlands Links" page.

- Northern Prairie Wildlife Research Center, Wetland Restoration Bibliography
  URL: *http://www.npwrc.usgs.gov/resource/literatr/wetresto/wetresto.htm*

  This site contains a searchable bibliography with 1651 entries. Searches may be organized by a number of different fields. The bibliography is also available in a downloadable zip file.

- Florida International University, Everglades Information Network
  URL: *http://everglades.fiu.edu/*

  A good resource for information on the Florida Everglades. This site includes both a "digital library" and an on-line searchable database.

- Florida Plants Online, Sustainable Everglades
  URL: *http://www.floridaplants.com/everglad.htm*

  This interesting site includes a number of good links with information on the Florida Everglades Restoration Project.

RECENT DEVELOPMENTS IN LAND USE AND ENVIRONMENTAL LAW*

Table of Contents

I. INTRODUCTION

This section highlights recent developments in federal and state environmental and land use case law, as well as notable legislation pending before the Florida Legislature. In addition to the sources cited in this section, the reader is encouraged to consult the official website of the Florida Legislature at <www.leg.state.fl.us>, and the Florida Department of Environmental Protection's website at <www.dep.state.fl.us>. Other useful sources the reader may wish to consult include the web site of the Environmental Land Use Section of the Florida Bar, <www.eluls.org>, and the FLORIDA ENVIRONMENTAL COMPLIANCE UPDATE, available through M. Lee Smith Publishers, LLC, <www.mleesmith.com>.

II. FEDERAL DECISIONS

Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc., 120 S. Ct. 693 (2000).

On January 12, 2000, the U.S. Supreme Court reversed the Fourth Circuit Court of Appeals, holding Friends of the Earth's (FOE) citizen suit was not rendered moot when the defendant company, Laidlaw Environmental Services (TOC), came into substantial compliance with the permit requirements.[1] The U.S. Supreme Court remanded the case to the district court for factual determinations about the effect of Laidlaw's compliance with the permit requirements and

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* The Recent Developments Section was researched and written by Leslie Bryson, J.D., The Florida State University College of Law (expected 2001).

1. *See* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., 120 S. Ct. 693, 700 (2000).

closure of its facility,[2] as well as for consideration of the issue of attorneys' fees.[3]

The Clean Water Act provides that the Administrator of the Environmental Protection Agency (EPA), or a state program authorized by the EPA, may issue a National Pollutant Discharge Elimination System (NPDES) permit.[4] Once issued, a NPDES permit allows for the discharge of pollutants into navigable waters.[5] An action may be brought if such a permit is violated,[6] and section 505 of the Clean Water Act allows private citizens to bring suit against permit violators to enforce an effluent standard or limitation.[7]

Laidlaw Environmental Services (TOC), Inc., operated a wastewater treatment plant in Roebuck, South Carolina.[8] South Carolina granted Laidlaw an NPDES permit so that it could discharge treated wastewater into the North Tyger River.[9] The permit placed limits on the amount of pollutants that Laidlaw was authorized to discharge into the river.[10] Laidlaw violated the permit limit numerous times by discharging more pollutants into the river than the permit allowed.[11]

On June 12, 1992, Friends of the Earth (FOE) brought suit against Laidlaw under the Clean Water Act citizen suit provision. [12] FOE alleged noncompliance with the NPDES permit and sought declaratory and injunctive relief and an award of civil penalties.[13] On January 22, 1997, the district court found that Laidlaw had committed 489 violations of permit limits for mercury and assessed a civil penalty of $405,800 against Laidlaw for the permit violations, concluding that the penalty had a deterrent effect.[14] The district court denied the plaintiffs' request for injunctive relief, finding that because Laidlaw had been in substantial compliance with permit requirements since 1992, injunctive or equitable relief would not be

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2. *See id.* at 711.
3. *See id.* at 712.
4. *See* 33 U.S.C. § 1342 (1998).
5. *See id.*
6. *See id.*
7. *See id.*
8. *See Friends of the Earth*, 120 S. Ct. at 701.
9. *See id.*
10. *See id.*
11. *See id.* at 702.
12. Citizens Local Environmental Action Network, Inc., (CLEAN) was also listed as a plaintiff with Laidlaw, and Sierra Club was later added as a plaintiff. *See id.* at 702.
13. *See id.*
14. *See id.* at 610-11.

appropriate.[15] FOE appealed the civil penalty, arguing that it was inadequate, but did not appeal the denial of injunctive relief.[16]

The Fourth Circuit Court of Appeals vacated the district court's order and remanded with instructions to dismiss.[17] The Fourth Circuit stated that because FOE had not appealed the district court's denial of injunctive relief, the only remedy available to redress their injuries would be civil penalties payable to the U.S. Treasury.[18] The Fourth Circuit, citing the Supreme Court's decision in *Steel Company v. Citizens for a Better Environment*,[19] declared that the action was moot because the only remedy available to FOE was civil penalties payable to the U.S. Treasury.[20] The Fourth Circuit held that civil penalties payable only to the U.S. Treasury and not to the plaintiff could not benefit the plaintiff.[21] The Fourth Circuit thus determined that because civil penalties payable to the U.S. Treasury could not redress the plaintiffs' injuries, the action was moot.[22] On March 1, 1999, the U.S. Supreme Court granted certiorari.

In the opinion written by Justice Ginsburg, the U.S. Supreme Court held that the Fourth Circuit incorrectly concluded that the case was moot.[23] The Court first noted that because the Fourth Circuit determined that the case was moot, the Fourth Circuit assumed, without deciding, that FOE had standing at the outset.[24] The Supreme Court noted that while standing and mootness share the same underpinnings of the U.S. Constitution's case or controversy requirement in Article III, section 2, the two are distinct in their inquiries.[25] The Supreme Court then addressed the issue of FOE's initial standing, beginning with the injury in fact inquiry.[26] The Court stated that the proper focus of the standing inquiry is the injury to the plaintiff, not the injury to the environment.[27] The Court held that the district court properly focused on injury to the plaintiff, rather than to the environment, in finding that FOE satisfied the

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15. *See id*. at 611.
16. *See* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., 149 F.3d 303, 305 (4th Cir. 1998).
17. S*ee id.* at 306-07.
18. *See id.* at 306.
19. 118 S. Ct. 1003 (1998).
20. *See Friends of the Earth, Inc.*, 149 F.3d at 306.
21. *See id.*
22. *See id.* at 306-07.
23. *See* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., 120 S. Ct. 693, 704 (2000).
24. *See id.*
25. *See id.* at 703-04.
26. *See id.* at 704.
27. *See id.*

injury in fact requirement for standing.[28] The Court listed the Article III standing requirements that a plaintiff demonstrate as first, that it has suffered an "injury in fact" that is concrete and particularized, and actual or imminent; second, that the injury is fairly traceable to the defendant's challenged action; and finally, that it is likely, rather than merely speculative, that the injury will be redressed by a decision in favor of the plaintiff.[29] The Court recounted testimony and statements by FOE members about their desires to engage in fishing, swimming, wading and camping activities in and near the river, activities which would be inhibited because of their concerns about Laidlaw's discharges. [30] The Court determined that this evidence demonstrated that Laidlaw's discharges directly affected the members' recreational, esthetic and economic interests sufficiently to satisfy the injury in fact requirement of standing.[31] Next, the Supreme Court addressed Laidlaw's contention that FOE lacked the requirement that the injury is likely to be redressed by a favorable decision because the only remedy FOE sought was civil penalties payable to the U.S. Treasury.[32] Laidlaw had argued that because the only remedy FOE sought was civil penalties payable to the U.S. Treasury, and further that because civil penalties do not provide redress to private citizens because they are payable to the government, any favorable decision would not provide redress to the plaintiffs.[33] The Supreme Court however, held that civil penalties payable to the U.S. Treasury do provide redress to citizen plaintiffs to the extent that they discourage current violations by defendants and deter future violations.[34] The Court clarified that *Steel Co.* does not dictate that citizen plaintiffs have no standing to seek civil penalties under the Clean Water Act, but only that citizen plaintiffs lack standing to sue for wholly past violations.[35] The Court explained that the *Steel Co.* holding did not address the question of whether citizen plaintiffs have standing to seek civil penalties for violations ongoing at the time the complaint is filed and that are likely to continue in the future.[36]

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28. *See id.*
29. *See id.* (citing Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992)).
30. *See id.* at 704-05.
31. *See id.* at 705-06.
32. *See id.* at 706.
33. *See id.*
34. *See id.* at 705-06.
35. *See id.* at 707.
36. *See id.* at 708.

Next, the Court addressed the mootness issue. The Court held that FOE's claim did not become moot when the defendant came into compliance with the permit requirements.[37] Rather, the standard for determining whether a defendant's voluntary conduct renders a claim moot is "if subsequent events made it absolutely clear that the allegedly wrongful behavior could not reasonably be expected to recur."[38] Furthermore, the party asserting mootness bears the burden of persuading the court that the conduct cannot reasonably be expected to occur again.[39] The Court determined that the Fourth Circuit confused standing with mootness when it relied upon *Steel Co.* regarding a citizen plaintiff's ability to seek civil penalties.[40] The Court conceded that the description of mootness as "the doctrine of standing set in a time frame" could lead to confusion.[41] In contrast to mootness, the plaintiff bears the burden of establishing standing by showing that the defendant's challenged conduct is likely to continue or occur in the future unless stopped by litigation.[42] The Court explained that there are circumstances in which the "prospect that a defendant will engage in (or resume) harmful conduct may be too speculative to support standing, but not too speculative to overcome mootness."[43] Plus, Laidlaw's closing of a facility might make the case moot, but only if it is "absolutely clear that Laidlaw's permit violations could not reasonably be expected to recur."[44] Finally, the Court held that the reimbursement of costs, including fees, is a matter for the district court to address.[45]

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37. *See id.* at 700.
38. *Id.* at 708 (quoting United States v. Concentrated Phosphate Export Ass'n, 393 U.S. 199, 203 (1968)).
39. *See id.* at 708.
40. *See id.*
41. *Id.* at 708-09.
42. *See id.* at 709.
43. *Id.*
44. *Id.* at 711.
45. *See id.* at 712.

Good v. United States, 189 F.3d 1355 (Fed. Cir. 1999), *aff'g* 39 Fed. Cl. 81 (1997), *cert. denied,* 68 U.S.L.W. 3367 (U.S. Apr. 03, 2000) (No. 99-881).

The Federal Circuit Court of Appeals held that a landowner who was denied a permit to dredge and fill wetlands on his property in the Florida Keys by the U.S. Army Corps of Engineers did not provide a showing of a reasonable, investment-backed expectation necessary to establish a taking under the Fifth Amendment.[46] The U.S. Supreme Court has denied certiorari.

In 1973, Lloyd Good purchased 40 acres of undeveloped land on Lower Sugarloaf Key, Florida, consisting of 32 acres of wetlands and 8 acres of uplands.[47] In 1980, Good began the process of obtaining the federal, state and local permits necessary to develop the land.[48] Good submitted his application to the U.S. Army Corps of Engineers for a permit to dredge and fill navigable waters of the United States.[49] In 1983, the U.S. Army Corps of Engineers granted his application for a permit to fill and excavate salt marsh acreage on the property to create a 54 lot subdivision and 48 slip marina.[50]

During the next ten years, Good received approval for his project from federal, state and county regulatory bodies.[51] But in 1989 the South Florida Water Management District recommended denial of Good's application based on total wetland loss and loss of habitat for endangered species. Good modified his project and submitted a new application with the Corps in 1990, but because of the presence of endangered species, the Corps was first required to consult with the Fish and Wildlife Service (FWS).[52] In 1991, FWS recommended denial because Good's 1988 and 1990 plans jeopardized the existence of the Lower Keys marsh rabbit and the silver rice rat, both endangered species.[53] In March 1994, the Corps denied Good's 1990 permit and notified him that his 1988 permit had expired.[54]

On July 11, 1994, Good filed suit in the Court of Federal Claims alleging that the Corps' denial of the permit amounted to a taking of private property without just compensation in violation of the Fifth

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46. *See* Good v. United States, 189 F.3d 1355, 1363 (Fed. Cir. 1999).
47. *See id.* at 1357.
48. *See id.*
49. *See id.*
50. *See id.*
51. *See id.* at 1358.
52. *See id.* at 1359.
53. *See id.*
54. *See id.*

Amendment.[55] The court granted summary judgment in favor of the government and held that there was no taking.[56] On appeal, Good argued that the Supreme Court in *Lucas v. South Carolina Coastal Council*[57] dispensed with the requirement of a reasonable, investment-backed expectation to establish a taking in cases where virtually all of the economic value of the landowner's property is eliminated.[58] The Federal Circuit Court of Appeals explained that this is not what the *Lucas* Court meant, and stated that "[r]easonable, investment-backed expectations are an element of every regulatory takings case"[59] even where the government action deprives the landowner of all economically or beneficial use of the landowner's property.[60] Good argued in the alternative that he did satisfy the requirement of having reasonable, investment-backed expectations of building a residential subdivision on his property, and that because he was only denied permits based upon the Endangered Species Act, which was not in existence at the time he bought his land, he could not have expected to be denied a permit based on its requirements.[61] The Federal Circuit Court of Appeals rejected this argument, observing that Good must have been aware of the increasing concern for environmental issues and corresponding regulatory response present in the time period between his purchase of the land and his first application for permits.[62] The Court also stated that at the time he bought the land, Good acknowledged that obtaining regulatory approval would be necessary and difficult, but waited several years before beginning the approval process.[63] Thus, the Court concluded that Good could not "fairly claim surprise when his permit application was denied."[64] The Court held that Good thus lacked the necessary element of a showing of a reasonable, investment-backed expectation of his ability to build a housing development on his land.[65]

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55. *See id*.
56. *See id.*
57. 505 U.S. 1003 (1992).
58. *See Good*, 189 F.3d 1361.
59. *Id.* (citing Loveladies Harbor, Inc. v. United States, 28 F.3d 1171, 1179 (Fed. Cir. 1994)).
60. *See id*. at 1361.
61. *See id.*
62. *See id.* at 1361-62.
63. *See id.* at 1362.
64. *Id.* at 1363.
65. *See id*.

Southern California Edison Co. v. Federal Energy Regulatory Commission, 195 F.3d 17 (D.C. Cir. 1999).

The District of Columbia Circuit for the U. S. Court of Appeals held that two orders by the Federal Energy Regulatory Commission (FERC) construing a provision of section 3(17) of the Federal Power Act to allow a "small power production facility" to use fossil fuels to supplement alternative fuels were an impermissible construction of the statute and could not stand.[66]

Under the Public Utilities Regulatory Policies Act of 1978 (PURPA), electricity facilities that engage in the production of electricity using fossil fuel alternatives, such as renewable resources and cogeneration of electricity, are exempt from certain regulatory controls.[67] PURPA also guarantees such facilities a market for their production by allowing the facilities to interconnect with and receive rates from the local public utility.[68] Facilities that qualify as a "small power production facility" defined by section 3(17) of the Federal Power Act, may be eligible for these entitlements.

Laidlaw, the owner and operator of Coyote Canyon Landfill Gas Power Plant that burns methane gas to generate electricity, had a purchase power contract with the Southern California Edison Company (Edison).[69] Laidlaw sought a declaratory ruling from FERC that its facility would continue to qualify as a "small power production facility" if it burned natural gas to boost its output in landfill gas in order to meet its contractual obligation to Edison.[70] Edison intervened in opposition to the petition.[71]

In a 1996 order, FERC determined that Laidlaw could use natural gas at its Coyote Canyon facility, but only for a maximum of 25 percent of its energy input, to equalize production and still qualify as a small power production facility.[72] In 1998, FERC clarified this order to mean that Laidlaw could use natural gas to levelize production "when burning natural gas will permit the facilities to

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66. *See* Southern California Edison Co. v. Federal Energy Regulatory Comm'n, 195 F.3d 17, 19 (D.C. Cir. 1999).

67. Pub. L. No. 95-617, 92 Stat. 3117 codified at 16 U.S.C. §§ 796(17)-(18), 824a-3, 824I, 824K (1994).

68. *See Southern California Edison Co.* 195 F.3d at 19.

69. *See id.* at 20.

70. *See id.* at 20-21.

71. *See id.* at 21. The Public Utilities Commission of the State of California also intervened in opposition. *See id.*

72. *See id.* at 22.

make more efficient use of their essential fixed assets."[73] Thus, the FERC orders interpreted the term "small power production facility" in section 3(17) of the Federal Power Act to allow fossil fuels to be used to supplement the use of alternative fuels by such a facility.[74]

Edison appealed the Orders, arguing that FERC's interpretation of the statute, which was that the statute allowed Coyote Canyon to burn up to 25 percent of its annual energy output, was contrary to the statute's plain meaning.[75] Edison asserted that section 3(17) of the Act is unambiguous, that the permissible uses of fossil fuels by a small power production facility are limited to those set forth in the statute, and furthermore, that there existed no delegation of authority to FERC to broaden the category of permissible uses of fossil fuels by such facilities.[76] FERC contends that section 3(17)(B) *is* ambiguous and thus that under the *Chevron*[77] two-step test, the Court must defer to FERC's reasonable interpretation of the statute.

The D.C. Circuit stated that under the *Chevron* two-step test, when the court reviews an agency's construction of a statute, it must first determine whether Congress has addressed the precise question at issue.[78] If the court determines that Congress has not addressed the issue at hand, the second step comes into play and the court must defer to the agency's reasonable interpretation of the statute.[79] The D.C. Circuit explained that "the statutory language is plainly crafted to allow fossil fuel use by small power production facilities for only a rather carefully defined set of exceptional uses" whereas "FERC applied an interpretation under which the fossil fuel uses may encompass essentially whatever FERC may find desirable in light of sound policy and the various statutory goals."[80]

The D.C. Circuit first applied the analysis of step one of the Chevron test by examining the text, structure, and context of the statute.[81] The court concluded there was no need to move to step two of the *Chevron* analysis, because Edison had correctly construed the statute by "giving rather obvious meaning to all the words and phrases that Congress used, and leaving no ambiguity to resolve at

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73. *Id.* (quoting 1998 Order, 84 FERC at p. 61,296, (JA 236)).
74. *See id.* at 18.
75. *See id.* at 22.
76. *See id.*
77. Chevron U.S.A., Inc. v. NRDC, Inc., 467 U.S. 837 (1984).
78. *See Southern California Edison Co.*, 195 F.3d 22 (citing *Chevron U.S.A., Inc.*, 467 U.S. at 842).
79. *See id.* at 23.
80. *Id.* at 24.
81. *See id.* at 23.

step two of *Chevron*.[82] The D.C. Circuit thereby concluded that FERC's interpretation of the statute as in its 1996 and 1998 Orders was an impermissible construction of the statute.[83]

III. FLORIDA DECISIONS

Save the Manatee Club, Inc. v. Southwest Florida Water Management District, Fla. Admin Order (Dec. 8, 1999) (on file with Clerk, Fla. Div. of Admin. Hearings).

The Florida Division of Administrative Hearings (DOAH) declared invalid a set of exemptions that, if granted, would allow a developer to avoid being subject to certain permitting criteria requirements.[84] DOAH held that the exemptions contained within rules issued by the Southwest Florida Water Management District (SWFWMD) were an invalid exercise of delegated legislative authority because the exemptions did not implement specific powers or duties in the SWFWMD's enabling legislation.[85] Save the Manatee Club, a non-profit manatee protection group, sought to prevent a developer, South Shores Property, from receiving the benefit of exemptions from permitting criteria.[86] The Club had filed a petition with DOAH seeking an administrative determination of the invalidity of paragraphs (3), (5) and (6) of Rule 40D-4.051 of the Florida Administrative Code, which contain the exemptions.[87]

South Shores proposed to develop 720 acres in Hillsborough County for a multi-phase, mixed-use project with boat access to Tampa Bay through an existing canal system.[88] For boats within the development to have access to Tampa Bay, however, an earthen berm or "plug" would have to be removed from the canal system.[89] The exemptions would allow South Shores to remove the "plug."[90] The plug is what most concerned the Club because its removal would allow increased motor boat access to Tampa Bay, a major

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82. *Id.* at 27.
83. *See id.* at 27.
84. *See* Save the Manatee Club, Inc. v. Southwest Florida Water Management Dist., Fla. Admin. Order at 50 (Dec. 8, 1999) (on file with Clerk, Div. of Admin. Hearings).
85. *See id.*
86. *See id.* at 2-5.
87. *See id.* at 3.
88. *See id.* at 7.
89. *See id.*
90. *See id.* at 9.

habitat of the manatee.[91] Power boats can seriously injure manatees and essential elements of the manatee habitat.[92]

The decision by the ALJ focused on the Club's challenge to exemptions under the last four sentences of section 120.52(8), Florida Statutes, which is known as the "flush left" language, and provides that:

> A grant of rulemaking authority is necessary but not sufficient to allow an agency to adopt a rule; a specific law to be implemented is also required. An agency may adopt only rules that implement or interpret the specific powers and duties granted by the enabling statute. No agency shall have authority to adopt a rule only because it is reasonably related to the purpose of the enabling legislation and is not arbitrary or capricious or is within the agency's class of powers and duties, nor shall an agency have the authority to implement statutory provisions setting forth general legislative intent or policy. Statutory language granting rulemaking authority or generally describing the powers and functions of an agency shall be construed to extend no further than implementing or interpreting the specific powers and duties conferred by the same statute.[93]

The ALJ reviewed the First DCA's 1998 decision in *St. Johns River Water Management District v. Consolidated-Tomoka*,[94] and stated that with the 1999 amendments to the "flush left" language of section 120.52(8), the legislature rejected the "class of powers and duties analysis conducted in *Consolidated-Tomoka*."[95] Furthermore, the ALJ stated that the 1999 amendments make it clear that the rulemaking authority of administrative agencies is limited.[96]

The ALJ stated that the standard of the 1999 amendments, which provides that "[a]n agency may adopt only rules that implement or interpret the specific powers and duties granted by the enabling

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91. *See id.*

92. *See id.*

93. FLA. STAT. § 120.52(8) (1999).

94. 717 So. 2d 72, 79 (Fla. 1st DCA 1998) (holding that the terms "particular powers and duties" in the flush left language of section 120.52(8), Fla. Stat. (1997), restrict agency rulemaking authority to "subjects that are directly within the class of powers and duties identified in the enabling statute").

95. *Save the Manatee Club, Inc.*, Fla. Admin. Order at 47.

96. *See id.*

statute,"[97] must be applied.[98] The ALJ then examined the three statutory provisions, sections 373.406, 373.413, and 373.414(9), Florida Statutes (1999), that are cited in the rule containing the exemptions.[99] The ALJ concluded that none of the laws were specific enough to allow the South Florida Water Management District to adopt the rules containing the exemptions from application of permitting criteria.[100] The ALJ thus concluded that the exemptions contained in the rule were invalid exercises of delegated legislative authority.[101]

Windward Marina v. City of Destin,
743 So. 2d 635 (Fla. 1st DCA 1999)

The First District Court of Appeal denied a petition for certiorari review of a circuit court order upholding the City of Destin's denial of Windward Marina's application for a development order.[102] The City of Destin had determined that the proposed development would be incompatible with surrounding uses with respect to boat traffic and denied the development order.[103] The First DCA stated that the only issue before it was whether the circuit court departed from the essential requirements of law by upholding the City of Destin's denial of the development order.[104] The City of Destin's comprehensive plan required that the city ensure the compatibility of surrounding land uses and provided that the compatibility of land uses is dependent on numerous characteristics, including nuisances.[105] In setting forth how compatibility of the proposed development is measured in relation to the surrounding area, the comprehensive plan listed "traffic generation" as one of the characteristics to be considered.[106] The City argued that "traffic" as used in the comprehensive plan included boat traffic, while Windward contended that boat traffic was not included in the definition.[107] Because neither the local ordinance nor the Growth

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97. FLA. STAT. § 120.52(8) (1999).
98. *See Save the Manatee Club, Inc*, Fla. Admin. Order at 9.
99. *See id.* at 48.
100. *See id.*
101. *See id.* at 50.
102. *See* Windward Marina v. City of Destin, 743 So. 2d 635, 636 (Fla. 1st DCA 1999).
103. *See id.*
104. *See id.*
105. *See id.* at 637 (quoting City of Destin, Fla., Ordinance No. 151, Chapter 7, Policy 7.A.4.6.p. (1990)).
106. *See id.* (quoting City of Destin, Fla., Ordinance No. 151, Chapter 7, Policy 7.A.4.6.p. (1990)).
107. *See id.* at 636.

Management Act[108] defined "traffic," the First DCA looked to the Growth Management Act as a whole and determined that term applied only to land-based traffic.[109] However, the First DCA determined that the reference to "nuisances" in the ordinance indicates that the city will consider whether a proposed development is compatible with surrounding uses without constituting a nuisance.[110] The First DCA conceded that a local government's denial of a development order may not be based on criteria that are not specifically enumerated in the land use regulations.[111] The First DCA nevertheless concluded that the term "nuisance" was sufficiently concrete to be used by the city as a criterion in determining whether to approve an application for a development order.[112] Finally, the First DCA stated that it could not conclude that the circuit court departed from the essential requirements of law in upholding the city's denial of the development order.[113] The dissent expressed concern that the majority decision creates a "broad and nebulous exception to every zoning ordinance" that permits local governments to deny applications for development orders on a case-by-case basis.[114]

IV. NOTABLE PROPOSED LEGISLATION FROM THE 2000 FLORIDA LEGISLATURE

These summaries of proposed bills before the Florida Legislature are adapted from staff bill analyses located on the Legislature's website at <www.leg.state.fl.us>. The versions of the bills are current as of the date of the staff analyses, and no final action had been taken by the Florida Legislature at the time of this author's writing.

CS/SB 758 Growth Management

This bill, sponsored by Senator Lee, would create a 25-member commission to study Florida's current growth management system and make recommendations to the Governor, President of the

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108. FLA. STAT. § 163.3177 (1997).
109. *See Windward Marina* at 638.
110. *See id.*
111. *See id.*
112. *See id.* at 639.
113. *See id.* at 640.
114. *Id.* at 641.

Senate, and Speaker of the House of Representatives.[115] The Governor would appoint ten members, and the President of the Senate and Speaker of the House of Representatives would each appoint seven members.[116] The Secretary of the Florida Department of Community Affairs would serve as a member.[117] The measure identifies appropriate issues regarding state, local and regional planning for the commission to consider in making specific recommendations and provides that the commission must issue its final report by February 1, 2001.[118] Several acts and programs comprise the Florida growth management system.[119] The Local Government Comprehensive Planning and Land Development Regulation Act of 1985,[120] requires local governments to adopt a comprehensive land use plan to guide local development and land use.[121] Each local plan must be consistent with the state and regional comprehensive plans. Chapter 187 provides for a state comprehensive plan that is intended to guide long-range policy and planning for the orderly social, economic, and physical growth of the state.[122] Chapter 186 provides for the creation of eleven Regional Planning Councils that must adopt a strategic regional policy plan that is consistent with the state comprehensive plan.[123] The Development of Regional Impact (DRI) program created by chapter 380 of the Florida Statutes, provides for state, regional, and local review of proposed developments that because of their character, magnitude or location would have a substantial effect upon the health, safety or welfare of the citizens of more than one county.[124]

SB 1824 Sovereign Submerged Lands

This bill, sponsored by Senator Campbell, addresses the controversy over lands the state claims as sovereign but that private property owners claim were deeded to them by the Board of Trustees of the Internal Improvement Trust Fund.[125] The bill would

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115. *See* Fla. S. Comm. on Comprehensive Planning, Local and Military Aff., CS for SB 758 (2000) Staff Analysis 1 (Feb. 7, 2000) (on file with comm.).

116. *See id.* at 3.

117. *See id.*

118. *See id.* at 4.

119. *See id.* at 1-2.

120. FLA. STAT. §163.3161-.3244 (1999).

121. *See* CS for SB 758 (2000) Staff Analysis at 1.

122. *See* FLA. STAT. § 187.101 (1999).

123. *See id.* §§ 186.504, .507.

124. *See id.* § 380.06.

125. *See* Fla. S. Comm. on Judiciary, SB 1824 (2000) Staff Analysis 1 (Mar. 12, 2000) (on file with comm.).

confirm and validate titles of land conveyed to private landowners by the state that may have included sovereign lands.[126] Under the bill, private landowners would be able to make a claim of ownership of the lands provided that certain requirements are met. The landowner's title must be derived from a deed or grant issued by the Board of Trustees of the Internal Improvement Trust Fund.[127] The title must appear to be valid on its face and the lands transferred in the deed or grant must have been land that the issuing agency or official had the legal authority to convey.[128] The title must have been in private ownership since the original conveyance from the state and must have been put to a qualified agricultural use by a private party, or improved or developed.[129] The land conveyed must have been classified as property for ad valorem tax assessment purposes.[130] The bill does not affect the public's right to use any navigable waters for fishing, boating and swimming.[131]

CS/SB 1694 Everglades Restoration

This measure seeks to address the adverse environmental impacts upon the Florida Everglades that have been the unintended consequences of the Central and Southern Florida Project for Flood Control and Other Purposes that was first authorized by Congress in 1948.[132] A central feature of the bill is the creation of the Everglades Investment and Accountability Act, which recognizes that development within the South Florida Ecosystem has culminated in the reduction of natural water storage, the loss of fresh water, and other unintended adverse environmental impacts.[133] The bill intends that a comprehensive plan be implemented to be used as a guide for a continuing planning process with the goals of restoring, preserving and protecting the South Florida Ecosystem and the water quality of the Everglades.[134] The bill contemplates that implementation of such a plan will costs billions of dollars that should come from state funding sources to match any federal contributions.[135] It is further

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126. *See id.*
127. *See id.*
128. *See id.*
129. *See id.*
130. *See id.*
131. *See id.*
132. *See* Fla. S. Comm. on Nat. Resources, CS for SB 1694 (2000) Staff Analysis 1 (Mar. 21, 2000) (on file with comm.).
133. *See id.* at 6.
134. *See id.* at 7.
135. *See id.*

contemplated that a partnership between the state and federal government will be established for the implementation of the plan.[136] The bill authorizes $100 million in funds annually from the state and requires that the South Florida Water Management District (SFWMD) provide $100 million in matching funds.[137] Under this measure the SFWMD and the Florida Department of Environmental Protection (DEP) must prepare detailed reports on the progress of the comprehensive plan and an accounting of all expenditures by the state in carrying out the project components.[138]

CS/HB 659 Private Property Rights

This measure, sponsored by Representative Alexander, amends the Bert J. Harris, Jr., Private Property Rights Protection Act.[139] In particular, the bill modifies the definitions of "action of a government entity" and "inordinate burden" to include any action by a governmental entity which involuntarily decreases the density of development below one residence for every five acres.[140] The modification to the term "inordinate burden" creates a rebuttable presumption that the governmental action at issue inordinately burdens the landowner's property.[141] Further, the bill provides that when a claim is filed for compensation, there is a rebuttable presumption that the government's action has inordinately burdened the landowner's property, and that the circuit court hearing the claim must determine whether the action did not inordinately burden the property.[142] These changes are designed to facilitate a property owner's ability to receive compensation under the Act.[143] The bill is designed prevent a reviewing court from using the standard of whether the landowner's reasonable, investment-backed expectations have been restricted or limited by the government action so as to require compensation to the landowner.[144]

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136. *See id.*.
137. *See id.* at 7-8.
138. *See id.* at 8.
139. FLA. STAT. § 70.001 (1999).
140. *See* Fla. H.R. Comm. on Judiciary, HB 659 (2000) Staff Analysis 1 (Mar. 13, 2000) (on file with comm.).
141. *See* Fla. CS for HB 659, § 4(e) (2000).
142. *See id.* §§ 5(b), 6(a).
143. *See* HB 659 (2000) Staff Analysis at 4.
144. *See id.*

SB 1848 Right to Farm Act

This proposed bill, sponsored by Senator Kirkpatrick, would impose limitations on local government ability to restrict or regulate the use of land for agricultural purposes.[145] The bill would amend section 823.14 of the Florida Statutes,[146] and would prohibit local governments from limiting the use of land for growing or harvesting crops, plants or trees or for raising livestock or any other agricultural purposes.[147]

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145. *See* Fla. S. Comm. on Agric., SB 1848 (2000) Staff Analysis 2 (Mar. 16, 2000) (on file with comm.).

146. FLA. STAT. § 823.14 (1999).

147. *See* SB 1848 (2000) Staff Analysis at 2.