

# AI in the USA: Technology's potential to improve the National Environmental Policy Act (NEPA) Impact Assessment Process



**Edward (Ted) Boling**

*Partner, Perkins Coie LLP  
United States of America*

<https://www.linkedin.com/in/ted-boling-66326811/>

<https://perkinscoie.com/professionals/edward-ted-boling>



# Deploying Artificial Intelligence in the United States to

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## Improve the Impact Assessment and Environmental Reviews

- New wave of NEPA Reform
- Case Law Support
- Efficiency (Identify Trends, and Other Future Actions)
- Better decision-making, public involvement, and more relevant Datasets

## Discuss the benefits and risks and the ethics of using AI?

- Responsible AI – create frameworks to prevent AI misuse
- Ensuring responsible AI deployment with proper labeling and authentication

# NEPA: Before 2020

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No major Supreme Court cases since *DOT v. Public Citizen* (2004)

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CEQ rules not substantially revised in >40 years

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Statute not significantly amended in > 40 years

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CEQ's authority largely unquestioned

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# NEPA: Recent developments

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CEQ regulations amended: 2020, 2022 (Biden Admin. Phase I Rule), and 2024 (Phase II Rule) -- litigation challenges (including *Iowa v. CEQ*)

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2023: Fiscal Responsibility Act Amendments

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2024: Supreme Court grants cert. in case about scope of agency review statute requires (*Seven County*)

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2024: D.C. Circuit sua sponte invalidation of CEQ authority (*Marin Audubon*)

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2025: NEPA Executive Order, CEQ Notice of Proposed Rulemaking, and CEQ Guidance Document

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# NEPA Amendments: Fiscal Responsibility Act of 2023 (June 3, 2023)

## DID

- Codify many concepts developed in NEPA caselaw (including some cases based on CEQ regulations), as well as some concepts from CEQ regulations.
- Adopt page limits and presumptive time limits for NEPA analyses.

## DID NOT

- Address “cumulative effects” or any category of effects (*Seven County*)
- Provide more explicit basis for CEQ’s rulemaking authority. (*Marin Audubon*)
- Restrict or otherwise speak to agencies’ ability to consider alternatives or impacts outside their control (*Seven County*).

# *Marin Audubon Society v. Federal Aviation Administration*, 121 F.4th 902 (D.C. Cir. Nov. 12, 2024)

- Court invalidated a plan for tour flights over four national parks on the ground that the analysis of the plan violated NEPA's statutory requirements, but rejected any arguments based on the NEPA regulations, which it determined are ultra vires.
- 2-1 majority found that, although neither party raised legitimacy of CEQ's rulemaking authority, that authority based on Carter Executive Order 11991 lacks any Congressional basis: "No statutory language states or suggests that Congress empowered CEQ to issue rules binding on other agencies—that is, to act as a regulatory agency rather than as an advisory agency."
  - *FDA v. Brown & Williamson*: an administrative agency's power to regulate in the public interest must always be grounded in a valid grant of authority from Congress.
  - *Youngstown Sheet & Tube Co. v. Sawyer*: the Constitution does not permit the Executive to arrogate to itself the lawmaking power of Congress.
- All parties sought rehearing *en banc* – petition denied, 2025 WL 374897 (Jan. 31, 2025) ("The panel unanimously ruled in favor of the challenge in this case on an entirely separate ground (one that the parties did raise and brief), . . . meaning that the panel majority's rejection of the CEQ's authority to issue binding NEPA regulations was unnecessary to the panel's disposition.")



# Seven County Infrastructure Coalition v. Eagle County, Colorado



Seven County Coalition: group of Utah counties that supports a proposed 88-mile railway project into Utah's relatively isolated Uinta Basin.



The railway would connect the Uinta Basin to the national rail network and carry a variety of natural resource commodities, primarily waxy crude oil destined for refinery markets along the Gulf Coast.



Surface Transportation Board approved Seven County's proposal in 2021 following an expedited EIS.



Eagle County, Colorado and the Center for Biological Diversity challenged the Board's decision in the U.S. Court of Appeals for the D.C. Circuit

# Seven County Infrastructure Coalition v. Eagle County, Colorado



Challengers argued Board should have considered potential “upstream” effects on increased oil drilling in Utah and Colorado & “downstream” oil refining activities > 1,000 miles away along the Gulf Coast.



D.C. Circuit panel: because the Board could prevent alleged environmental effects related to the proposed railway by denying Seven County's application, it should have analyzed increased drilling and increased air emissions at Gulf Coast refineries. *Eagle Cnty. v. Surface Transp. Bd.*, 82 F.4th 1152, 1180 (D.C. Cir. 2023).



Cited D.C. Circuit precedent, *Sierra Club v. FERC* (Sabal Trail case), 867 F.3d 1357,1373 (D.C. Cir. 2017).



Sabal Trail has come under fire as inconsistent with *Public Citizen v. NHTSA* 541 U.S. 752, 770 (2004): “where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions,” its NEPA analysis need not include that effect.



Cert. question: “Does [NEPA] require an agency to study environmental impacts beyond the proximate effects of the action over which the agency has regulatory authority?”

- Government opposed cert.
- Argument held December 10.

# Seven County Infrastructure Coalition v. Eagle County, Colorado

- Petitioners: D.C. Circuit should have upheld STB's decision b/c NEPA only requires agencies to consider the *reasonably foreseeable* environmental effects of a proposed agency action that are *also* within its jurisdiction.
  - Section 102(c): agency must consider "(ii) any reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented"
- Federal respondents: Board reasonably limited its consideration of the upstream and downstream effects of the proposed rail line
  - Proper scope of NEPA analysis must be determined on case-by-case basis.
  - Disagreed with P's position that effects outside the agency's jurisdiction, or that are remote in time and space, are never reasonably foreseeable.
- Respondents: increased emissions foreseen, ergo foreseeable.

# Seven County Infrastructure Coalition v. Eagle County, Colorado

- [At least] two alternative bases to *reverse* Court of Appeals:

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(1) U.S. (narrow) approach: Court of Appeals did not sufficiently apply APA deference to agency's determination of the scope of its review

- Simple application of *Kleppe*
- This is not deference to statutory interpretation (at issue in *Loper Bright*)

(2) P's approach: new rule that agency need not consider effects that are "remote in time and space" and outside the agency's jurisdiction

- What does this add to *Public Citizen*?

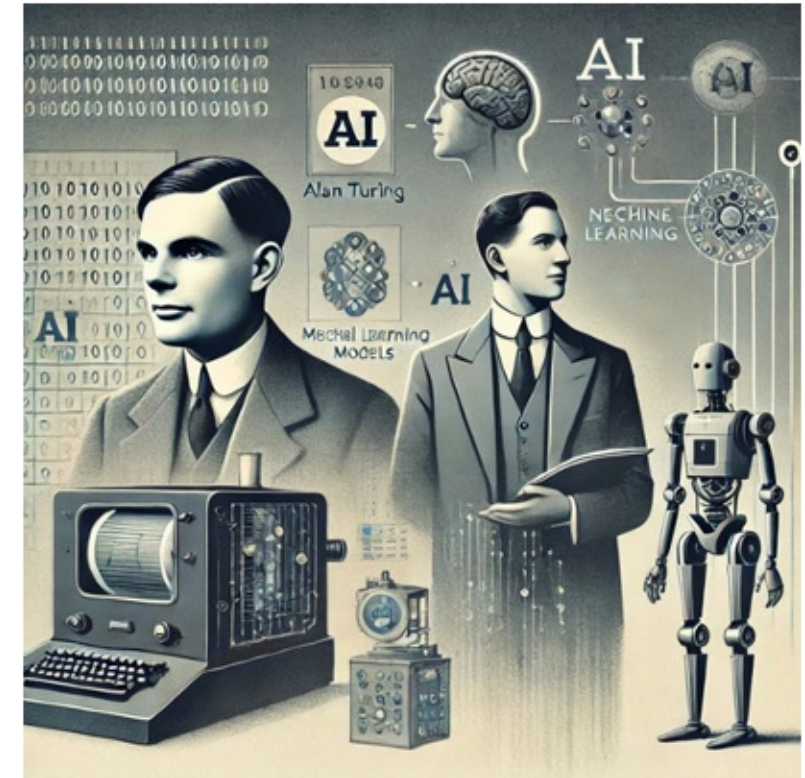
## Executive Order 14154, “Unleashing American Energy” (Jan. 20, 2025)

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- 1) Revoked President Carter’s Executive Order 11991
- 2) Directed CEQ to propose rescinding its NEPA regulations, and
- 3) Required CEQ to issue guidance on implementing NEPA by February 19, 2025 and to convene a working group to coordinate the revision of agency-level implementing regulations “for consistency.”
- 4) Any CEQ guidance or agency-specific implementing regulations “must expedite permitting approvals and meet deadlines established in the Fiscal Responsibility Act of 2023,” and “**prioritize efficiency and certainty over any other objectives . . . .** that could . . . add delays and ambiguity to the permitting process.

# Overview of Generative Artificial Intelligence

- Artificial Intelligence (AI), a term coined by emeritus Stanford Professor John McCarthy in 1955, was defined by him as “the science and engineering of making intelligent machines”.  
(Source url- <https://hai.stanford.edu/sites/default/files/2020-09/AI-Definitions-HAI.pdf>)
- Artificial intelligence, or AI, is technology that enables computers and machines to simulate human intelligence and problem-solving capabilities (Source IBM)
- The history of AI dates back to the 1950s, beginning with the work of pioneers like Alan Turing, who proposed the Turing Test as a measure of machine intelligence. The Dartmouth Conference in 1956 marked the official birth of AI as an academic discipline. (The Quest for Artificial Intelligence" by Nils J. Nilsson)

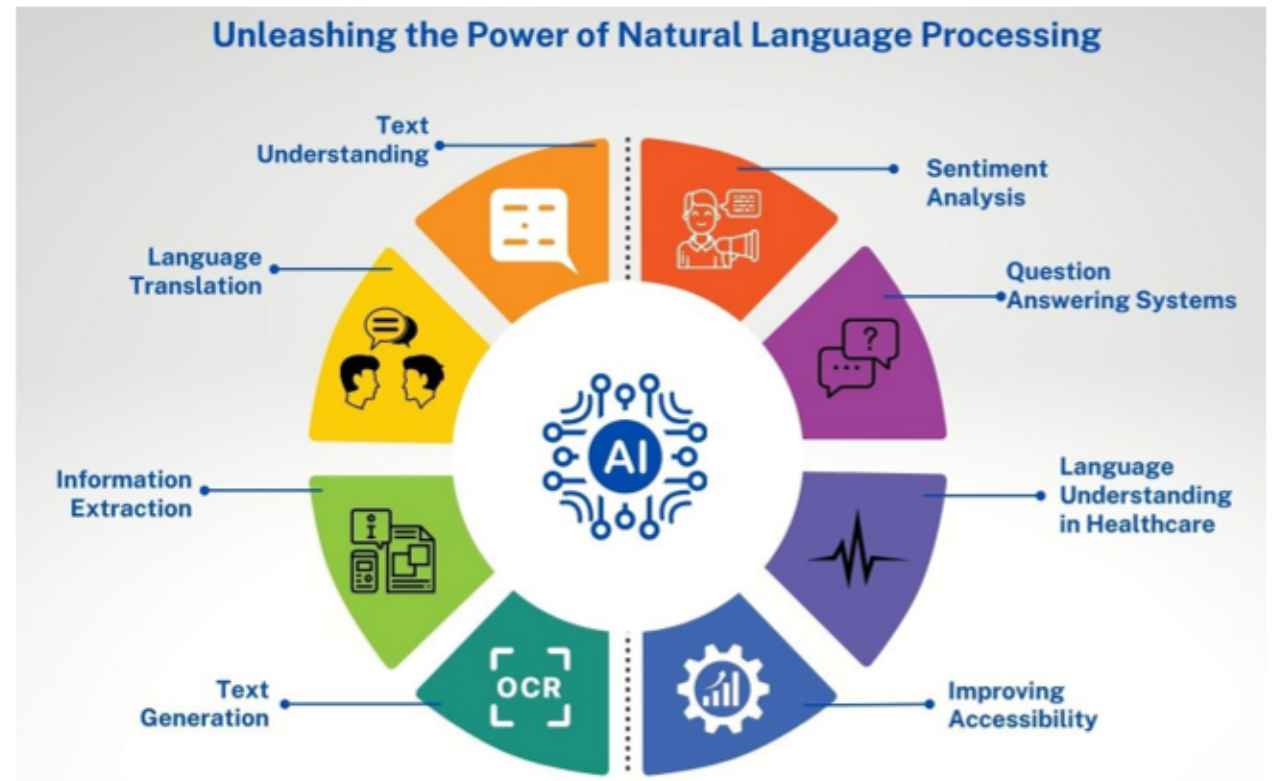


# Types of Generative AI Tools – Background

Natural Language Processing (NLP) is a field of AI focused on the interaction between computers and humans through natural language. NLP enables AI to understand and generate human language, with applications including chatbots, language translation, and sentiment analysis.

Examples: Google Translate, customer service bots.

- Examples
  - GPT-4 (ChatGPT)
  - OpenAI
  - InstructGPT (older)
  - AutoNLP
  - Grok – X
  - Gemini – Google



# United States' Executive Orders and Guidance

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Executive Order 14179, Removing Barriers to American Leadership in Artificial Intelligence, 90 Fed. Reg. 8741 (Jan. 23, 2023) - Requires AI Action Plan and Removal of Inconsistent Policies

Executive Order, Updating Permitting Technology for the 21st Century (Fed. Reg. Notice pending, issued Apr. 15, 2025) - "Executive departments and agencies (agencies) shall make maximum use of technology in environmental review and permitting processes for infrastructure projects of all kinds." **Requires CEQ to issue Permitting Technology Action Plan within 45 days.**

*See also:*

- OMB Memorandum M-25-21, Accelerating Federal Use of AI through Innovation, Governance, and Public Trust
- OMB Memorandum M-25-22, Driving Efficient Acquisition of Artificial Intelligence in Government

# Permitting Technology Action Plan

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Permitting Technology Action Plan shall include:

- (i) an initial data and technology standard for permit applications and reviews under NEPA and other applicable permits and authorizations;
- (ii) minimum functional requirements for agency NEPA and permitting-related software systems, including systems related to case management, automation to expedite low-level reviews, data-driven document structure, and data collection and reporting to minimize timeline uncertainty for environmental reviews;
- (iii) a roadmap for creating a unified interagency permitting and environmental review data system consisting of interconnected agency systems and shared services that includes iterative development of new platforms, tools, and capabilities, key investments and decision points for consolidating digital infrastructure, and resulting outcomes for environmental review and permitting;
- (iv) an interagency governance structure for oversight of implementation of the Permitting Technology Action Plan; and
- (v) a timeline for agencies to accomplish the activities outlined in the Permitting Technology Action Plan.

# Permitting Innovation Center

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Chairman of CEQ shall establish and lead an interagency Permitting Innovation Center that will design and test prototype tools that could be implemented pursuant to the Permitting Technology Action Plan for NEPA reviews and other environmental permits and authorizations.

The Permitting Innovation Center shall facilitate agency adoption of prototype software systems, including for case management systems, application submission and tracking portals, automation of application and review processes, data exchange between agency systems, and acceleration of complex reviews.

General Service Administration's Technology Transformation Services shall provide support for the establishment of the Permitting Innovation Center consistent with applicable law.

# United States Statutory Requirements

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NEPA, As Amended, 42 U.S.C. § 4336(b):

(3) SOURCES OF INFORMATION -- In making a determination under this subsection, an agency—

(A) may make use of any **reliable data source**; and

(B) is not required to undertake new scientific or technical research unless the new scientific or technical research is essential to a reasoned choice among alternatives, and the overall costs and time frame of obtaining it are not unreasonable.

# United States - Other Government Initiatives

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As Required by 42 U.S.C. § 4336(d), CEQ released a Report to Congress on the Potential for Online and Digital Technologies to Address Delays in Reviews and Improve Public Accessibility and Transparency evaluates the potential for technology to improve environmental review and permitting processes (July 24, 2024).

- CEQ recommends defining data standards for agency or other applications, including a data architecture for the NEPA process and metadata for structured and unstructured data, including Artificial Intelligence (AI) models or other embedded machine learning systems
- Identifies Academic, Private and International AI Tools

# Case Law Supports Use of High-Quality Information, including reliable data and resources

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Courts require agencies that prepare an impact statement to act with high integrity. The agency must ensure the professional integrity, including scientific integrity of data and analysis in impact statements.

- *See, e.g., Cachil Dehe Band of Wintun Indians of the Colusa Indian Com'y v. Zinke*, 889 F.3d 584 (9th Cir. 2018) (finding that biological and economic data relied up in decision to take land into trust for Indian gaming casino were adequate).
- *Rybachek v. U.S. EPA*, 904 F.2d 1276, 1297-98 (9th Cir. 2001)(holding agency did not falsify data and ignore results of other test that would have undermined its analysis).
- *Idaho Sporting Congress v. Rittenhouse*, 305 F.3d 957, 972 (9th Cir. 2002) (invalidating USFS use of habitat as a proxy for population trends because its methodology produced obviously inaccurate habitat numbers).

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# Benefits of AI as a Tool

# Potential Opportunities to use AI as a tool

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## Enhancing Productivity and Improved Decisions-Making

1. AI use in Public Involvement and Public Comment
  - a. Ensures Diverse Perspectives Considered
  - b. Promotes Transparency and Trust
    - i. Example: US DOT funded grant to Pond & Company, with the GA DOT- AI Engage Revolutionizing Public Involvement with Intelligent Interaction with the SR 22/Sparta Highway NE at SR 24 Intersection Project
2. AI use in preparation of environmental review/impact assessment technical documentation
  - a. Initial use for scoping of impacts
  - b. Initial start for Executive Summary
  - c. Incorporation of AI impact assessment and prediction (next slide)

# Potential Opportunities to use AI as a tool

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## Enhancing Productivity and Improved Decisions-Making

3. AI use in Data Accessibility and Prediction – ability to identify vast amounts of data quickly and accurately
  - a. NEPA requires identification of data for natural resources, water and air impacts, as well as many other – use of AI for scoping of impacts and identification of data sources (see also U.S. CEQ technology initiatives for digital data).
4. AI use in predicting trends (other actions, future development, connected actions)
  - a. Use of Digital Twins in environmental impact assessment and prediction
  - b. Identification of Past, Present and Future Action in Spatial and Temporal Impact Areas
  - c. U.S. EPA: Waste Reduction Algorithm, Chemical Process Simulation for Waste Reduction (The algorithm can weigh different potential impacts like global warming potential or risk of human exposure).

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# Risks of AI

# Case Study: Roberto Mata v. Avianca Inc.

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In February 2022, Roberto Mata filed an action alleging he was injured when a metal serving cart struck his knee during an international flight (See Mata v. Avianca, Inc., F. Supp. 3d, 22-cv-1461 (PKC), 2023 WL 4114965, at \*2 (S.D.N.Y. June 22, 2023)).

Mr. Mata's attorney file response to Avianca's MTD, including non-existence of several cases cites. Mr. Mata's attorneys did not withdraw the opposition brief.

Court could not locate cases – ordered attorneys to file an affidavit attaching copies of cases. Attorney attached cases containing all but one of decisions, which were fabricated by ChatGPT.

Attorneys sanctioned under Rule 11, fined 5K and forced to send Judges cited the fabricated cases.

<https://www.nytimes.com/2023/05/27/nyregion/avianca-airlinelawsuitchatgpt.html>



# Practical lessons from Mata:

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1. Become familiar with the strengths and implications of AI
  - a. Cmt 8 Model Rule of Prof. Cond. 1.1 provides that “a lawyer should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology.”
  - b. Attorneys using “open source” AI platforms like ChatGPT can violate this duty by including sensitive case information within queries that are then shared with “AI trainers.” New proprietary products like CoCounsel and Harvey, on the other hand, contain confidentiality controls in place that may minimize disclosure risks
2. Verify AI work product and identify tasks only attorneys can perform.
3. Correct mistakes immediately

Source: <https://www.acc.com/resource-library/practical-lessons-attorney-ai-missteps-mata-v-avianca>

# Ethics, Security and Other Considerations

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- Potential bias (solution – emphasize known data, verify) (Ethical Implications)
- Accessibility (solution – be aware and identify ways to use AI itself to increase accessibility)
- Privacy (solution – follow policies on consent) (Ethical implications)
- Transparency (solution – e.g., disclose AI-generated content)
- Lack of accountability (solution – authentication required) (Ethical implications)
- Confidentiality (solution – if needed, develop or use custom tools) (Security Implications)
- Intellectual property (solution – respect IP policies) (Security Implications)

# Responsible AI Deployment

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- Ethical Standards and Guidelines Established
- Transparency in Deployment
- Stakeholder Engagement
- Establish Best Practices for ethical AI Deployment

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# Questions?



# Let's continue the conversation!

Message me your questions or comments in the IAIA25 app.

**Edward (Ted) Boling**

*Partner, Perkins Coie LLP*

*U.S.*

<https://www.linkedin.com/in/ted-boling-66326811/>

<https://perkinscoie.com/professionals/edward-ted-boling>

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