

## **Appendix 4 to CEQ's E-NEPA Report to Congress: 18F Path Analysis**

# Expediting permitting within the current digital landscape

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## **Date**

January 4, 2024

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# Project overview / Executive summary

A team from 18F, working with our partners at the Council on Environmental Quality (CEQ), spent eleven weeks investigating the permitting process with a focus on the electric transmission sector to make recommendations and identify opportunities that would improve efficiency and effectiveness of the permitting process and implement the E-NEPA provision of the Fiscal Responsibility Act of 2023.

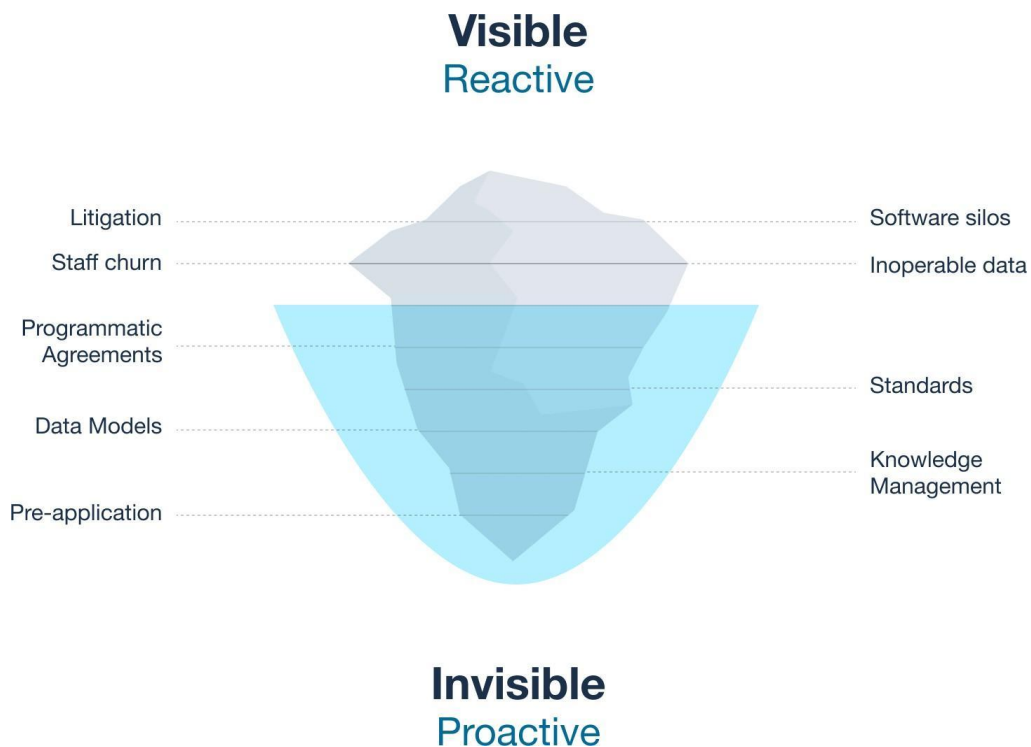
Our research shows technology alone will not accelerate the permitting process. To date, there have been many disparate systems created to aid in processing permits with various levels of capability, and environmental review agencies would benefit from greater coordination to acquire the systems needed to support their work. The agencies with the resources to make the technical investments have done so, while others have not for various reasons.

As a result, you have an ecosystem of non-interoperable systems with varied capabilities that often only serve the needs of the agency that procured the solution.

Ultimately, these tool investments fall short of improving the efficiency and effectiveness of the permitting process because of the “some and not all” paradigm because some, but not all, agencies have made necessary investments and these investments could benefit from greater coordination and standardization. While regulation reforms are being explored, making strategic technology investments in centralized systems for cross-agency use is the best opportunity for impact at scale for both agency employees, permit applicants, and the general public in the long run. Technical systems that enable efficient data sharing, collaboration, decision-making, and transparency will introduce standardization, minimize wasted efforts, and ultimately lead to more expedited permits.

Agencies are interested in a single application “for the entire federal family,” but we must start small and **shift from a reactive approach to a proactive one in order to build scalable solutions**. The road to centralized access to NEPA documents, or even basic agency data sharing, is paved with smaller projects to establish standards and agreements. (Much like the challenges of seeing the visible “tip of the iceberg” compared to the larger challenges hidden beneath the waterline.) These smaller projects provide an opportunity for iterative development that responds to the things we learn as we test, so that a smaller working prototype can grow to a solution that works well for a wide audience.

Addressing the larger challenges requires a collective effort of iterative development that ladder up to enterprise-scale solutions. **Efforts to connect systems, processes, and teams are the building blocks needed** to create the feeds, data, and tools for a more extensive permitting application process to thrive.



The visible aspects of the process compared to the “below the surface” processes

Of all our focus areas, **the pre-NEPA phase offers the most potential for changes.** (The term pre-NEPA is used in this report to refer to actions taken prior to the formal initiation of the NEPA process. Some agencies have formal pre-application processes that occur prior to NEPA initiation whereas others have less formal pre-NEPA processes.)

When we spoke with agencies, the pre-NEPA phase was often mentioned as an area for improvement and in need of an increase in resources. Improving pre-NEPA processes is an ideal example of a proactive approach to the current challenges, as it provides an opportunity to address the revisions, feedback, and guidance that are received before the applications are submitted.

Pre-NEPA processes specifically fostered collaboration between agencies and applicants, improved the application quality and the subsequent public commenting period that ensues, and from our stakeholder interviews was found to accelerate the environmental reviews of the highest volume review types, environmental assessments (EA), and categorical exclusions (CE).

## **Problem statement**

Stakeholders involved in the NEPA process are constrained. Decision time for permitting actions can be prohibitively long. This leads to frustrations, delays, and unpredictable expenses for applicants and agencies and has a negative impact on the permitting process, the communities affected by the associated projects, and the proposed projects.

## **Background**

Congress has requested a feasibility study on building an eNEPA portal (not to be confused with the [existing eNEPA system](#)). This work will directly feed into CEQ's report to Congress on the potential for online and digital technologies to address delays in reviews and improve public accessibility and transparency under section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)).

# Recommendations

Our research uncovered a lot of opportunities that could be addressed to improve NEPA and the environmental review process, but our recommendations focus on high value and impact efforts based on our qualitative research. Framing these ideas into three distinct work efforts provide a better understanding of how CEQ can achieve the northstar, a single application “for the entire federal family”: **CEQ as accelerator, incubator, and amplifier.**

## CEQ as accelerator



### Data as the engine for acceleration

By focusing on better data hygiene and standards, CEQ can help pave the way for new applications that use the data while allowing others to use the data in new and more effective ways. Shared data infrastructure would also give CEQ and agencies a better opportunity to develop shared analytics and reporting across all project stages. Data and reporting exist at the agency level (when they exist) and can’t quickly be brought into a more comprehensive data store to compare across agencies.

### Prioritize machine-readable data and metadata

Centralized tools thrive when they consume consistent and standardized data. As long as agencies use different document standards, the efforts to unify and collaborate will suffer. Beyond a unique identifier (ID), documents must have accompanying metadata according to a common taxonomy linking projects, programs, legislative, and geospatial data.



New standards will require better document formatting with a set of standard headers and sections and data in tabular formats.

Existing EPA metadata standard	Suggested document level metadata	Additional metadata suggested by EPIC, FAS, NEPAccess
<ul style="list-style-type: none"> <li>Title</li> <li>Author (currently noted as the organization that developed the file)</li> <li>Subject</li> <li>Keywords</li> </ul>	<ul style="list-style-type: none"> <li>Related documents</li> <li>Version</li> <li># of embedded objects</li> </ul>	<ul style="list-style-type: none"> <li>Standardized NEPA process classification taxonomy</li> <li>Policy, plan, program</li> <li>Project</li> <li>Legislative</li> <li>Geospatial information</li> <li>Public participation metadata</li> <li>Supporting data, documents, and analyses</li> </ul>

Please see the [appendix section on metadata](#) for more on suggested fields and structured data.

As the [Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence](#) notes, establishing structured data collections is pivotal in building and training large language models (LLMs) and other AI systems like those in development at NEPAccess and the Department of Energy. Even more important is the sourcing and preparation of data for use by such systems. CEQ’s involvement can help ensure standards of transparency, fairness, accountability, privacy, and respect for human agency.

Another example is the large collection of categorical exclusions from over 70 agencies’ NEPA procedures [as documented at NEPA.gov](#). The spreadsheet is thousands of cells of unsorted text, with no clear mechanism to search or sort across the data. Data like this could be of higher value if it could be sorted and searched for attributes such as applicable regulation, environment, contained activity, and more. Turning this text into data would be building a data source for current and future NEPA-related applications.

	A	B
1	U.S. Department of Agriculture (USDA) Categorical Exclusions (CE)	
2	<b>U.S. Department of Agriculture (USDA)</b>	
3	<b>§1b.3 Categorical exclusions.</b>	
4	<a href="https://www.ecfr.gov/g/17-c-ecfr&amp;amp;SID=47c103e07564e933c77f4c4b3d4a9a&amp;amp;gpo=div5&amp;amp;view=text&amp;amp;node=793a1.1.1.1.3&amp;amp;idno=78e7.1.1b_14">https://www.ecfr.gov/g/17-c-ecfr&amp;amp;SID=47c103e07564e933c77f4c4b3d4a9a&amp;amp;gpo=div5&amp;amp;view=text&amp;amp;node=793a1.1.1.1.3&amp;amp;idno=78e7.1.1b_14</a>	
5	(a) The following are categories of activities which have been determined not to have a significant individual or cumulative effect on the human environment and are excluded from the preparation of environmental assessment (EA) or environmental impact statement (EIS), unless individual agency procedures prescribed otherwise.	
6	(1) Policy development, planning and implementation which relate to routine activities, such as personnel, organizational changes, or similar administrative functions;	
7	(2) Activities which deal solely with the funding of programs, such as program budget proposals, disbursements, and transfer or reprogramming of funds;	
8	(3) Inventories, research activities, and studies, such as resource inventories and routine data collection when such actions are clearly limited in context and intensity;	
9	(4) Educational and informational programs and activities;	
10	(5) Civil and criminal law enforcement and investigative activities;	
11	(6) Activities which are advisory and consultative to other agencies and public and private entities, such as legal counseling and representation;	
12	(7) Activities related to trade representation and market development activities abroad.	
13	(b) Agencies will identify in their own procedures the activities which normally would not require an environmental assessment or environmental impact statement.	
14	(c) Notwithstanding the exclusions listed in paragraphs (a) of this section and §1b.4, or identified in agency procedures, agency heads may determine that circumstances dictate the need for preparation of an EA or EIS for a particular action. Agencies shall continue to scrutinize their activities to determine continued eligibility for categorical exclusion.	
15	<b>§1b.4 Exclusion of agencies.</b>	
16	<a href="https://www.ecfr.gov/g/17-c-ecfr&amp;amp;SID=47c103e07564e933c77f4c4b3d4a9a&amp;amp;gpo=div5&amp;amp;view=text&amp;amp;node=793a1.1.1.1.3&amp;amp;idno=78e7.1.1b_14">https://www.ecfr.gov/g/17-c-ecfr&amp;amp;SID=47c103e07564e933c77f4c4b3d4a9a&amp;amp;gpo=div5&amp;amp;view=text&amp;amp;node=793a1.1.1.1.3&amp;amp;idno=78e7.1.1b_14</a>	
17	(a) The USDA agencies and agency units listed in paragraph (b) of this section conduct programs and activities that have been found to have no individual or cumulative effect on the human environment. The USDA agencies and agency units listed in paragraph (b) of this section are excluded from the requirements of preparing procedures to implement NEPA. Actions of USDA agencies and agency units listed in paragraph (b) of this section are categorically excluded from the preparation of an EA or EIS unless the agency head determines that an action may have a significant environmental effect.	
18	(b)(1) Agricultural Marketing Service	
19	(2) Economic Research Service	

## CEQ as incubator



### Establish a framework and funds for incentives

CEQ should consider providing resources in the form of prizes, training, and tools. It will be especially helpful to provide training for project managers on NEPA processes. Allies in academia currently have a reputation for trust and neutrality, and better access to skills and staff. CEQ should find agency and state-level teams building software and directly support their efforts, learning from their work and outputs — support and fund allies and agencies building tools like NEPAcess (University of Arizona), Efficient Transportation Decision Making: Environmental Screening Tool (Florida Department of Transportation), Kentucky Interagency Coordination Tool (Natural Resources Conservation Service and West Virginia University), to scale and create system level tools.

### Leverage academic partnership to increase tools

A number of universities like the University of Arizona and West Virginia University have been building tools to improve the transparency and efficiency of environmental reviews for several years either in a staff augmentation capacity or for academic research pursuits. CEQ should investigate building similar partnerships with environment/ecology programs to foster working relationships and identify strategic development opportunities.

These institutions have the infrastructure and access to researchers and student staff from numerous disciplines such as Environmental Law, Computer Science, Data Science, Design and Biology. They can support the development of environmental permitting tools at a faster pace as they already have diverse subject matter expert staff

on hand, can more easily fill roles from their large talent pipeline of graduate and undergraduate students, and experience lower staff turnover. Furthermore, academic institutions with environmental research centers missions align and overlap with the missions of many federal agencies, and there are a wide variety of potential partnering options available, many of which already exist under authorities at CEQ partner agencies, including, but not limited to agreements, arrangements, and other partnering authorities such as:

- University Affiliated Research Centers (UARCs);
- Cooperative Institutes (CIs);
- Cooperative Research and Development Agreements (CRADAs);
- Facility Use/Service Agreements (FUSAs);
- License Agreements (LAs); and,
- Technical Assistance Agreements (TAAs).

Creating these academic partnerships is a potential win for agencies and students alike. They represent a talent pipeline to recruit from to backfill vacant roles agencies have identified as persistent challenges to the completion of environmental reviews. Domain expertise can be cultivated at lower cost, while students gain valuable work experience before they graduate. Finally, agencies can also work with academic institutions to develop and maintain academic programs to foster a talent pipeline for the environmental review field, and to help students get the preparation and degrees they will need for these in-demand fields.

### **Improve NEPA knowledge management training**

By offering more NEPA training, creating designated support roles, and building a knowledge repository, CEQ would reduce the staffing burdens and delays in the environmental review process and improve the overall applicant experience.

Currently, agencies must develop and invest in their own knowledge resources. New employees have to locate NEPA information living in several places or rely on a more experienced staff member for answers; these knowledge gaps reduce the level of guidance and support received by permit applicants, hindering overall compliance.

CEQ can ensure high-quality, accessible and timely training by developing materials for staff and applicants. Continuous and centralized training materials help democratize domain expertise and prevent environmental reviews from relying on the expertise level of a few. We observed that having dedicated NEPA support specialists available to work

with applicants through the journey and application development during the pre-NEPA phase provides considerable environmental review efficiencies. However, limited budgets and staffing constrained this option. All agencies should staff dedicated NEPA support specialists that serve an account management capacity as this could help with agency staff turnover, reduce the workload of some overburdened staff, and provide the applicant a single point of contact.

By staffing them, agencies will not remove the need for a knowledge repository, but will provide needed assistance from people who can also identify training needs for CEQ to create. Investing in these pre-NEPA tactics would improve outcomes of environmental reviews and increase the number of subsequent environmental impact statement (EIS) reviews that benefit from this knowledge transfer.

### **NEPA tech incubator and accelerator**

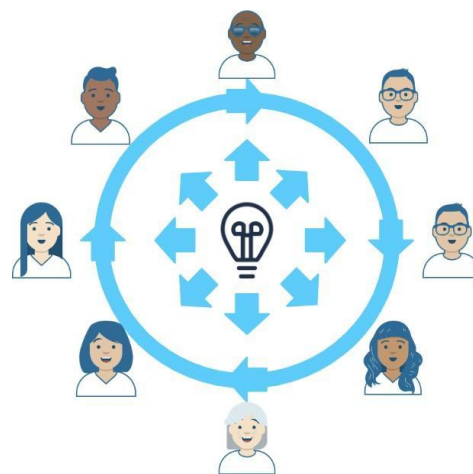
There are a number of innovative tools in the ecosystem, but they are built for agency-specific use rather than broad adoption. CEQ, and the Federal NEPA community would benefit from a dedicated group focused on strategic NEPA technology investment and development similar to those found in startup incubators. This proposed incubator group would support various federal, state, and tribal agencies, as well as academia or nonprofit partners who have demonstrated success at building tools, allowing CEQ to accelerate technology development and improve the NEPA environmental review process.

Currently, the Permitting Council is focused on complying with FAST-41 and the permitting dashboard. One of the benefits of the Permitting Council is that it is composed of Deputy Secretary-level officials from 13 federal agencies, the Council on Environmental Quality, and the Office of Management and Budget. This diversity of the council may help ensure that the broad stakeholders impacted are represented without bias. The NEPA incubator group would benefit from having similar diverse members such as the council including the General Services Administration and its Technology Transformation Service, and the addition of Tribal representation, to fill the void of a **technology systems thinker**.

CEQ should also ensure interests beyond the Federal agencies are included and seek out input from State, Tribal, and local governments, project sponsors, and the public. Whether the incubator is created or the Permitting Council broadens its responsibility, this group's mandate should be to support and scale not only [innovative environmental tools](#) that are already in the ecosystem, but also help identify and prioritize new tools for funding as accomplished in many existing startup tech incubators.

It is important to note there may be challenges around non-Federal agencies participating in a formal working group, especially around the Federal Advisory Committee Act (FACA). We encourage CEQ to explore all options that allow gathering input from outside groups while working within existing regulations and rules. Environmental reviews and NEPA compliance require strategic collaboration. The ideal incubator group is composed of broad environmental subject matter experts who can also contribute insights that are particular to their agencies' concerns. Such a group, with CEQ's help, is well positioned to identify and fund environmental technology applications. Goals should include support projects under development, developed and need to scale for broader use, in need operating budgets for maintenance, or even those that are yet to be coded.

By having a coalition make targeted strategic technology investment bets at various product lifecycle phases the larger permitting and environmental review process will benefit from continual innovation releases. These iterative updates should create efficiencies throughout the different phases of an environmental review such as pre-NEPA, NEPA document drafting, and commenting. CEQ, the Permitting Council and Office of Management and Budget should collaborate to identify the most suitable program manager for this effort.



### **Prizes bolster innovations and improvements**

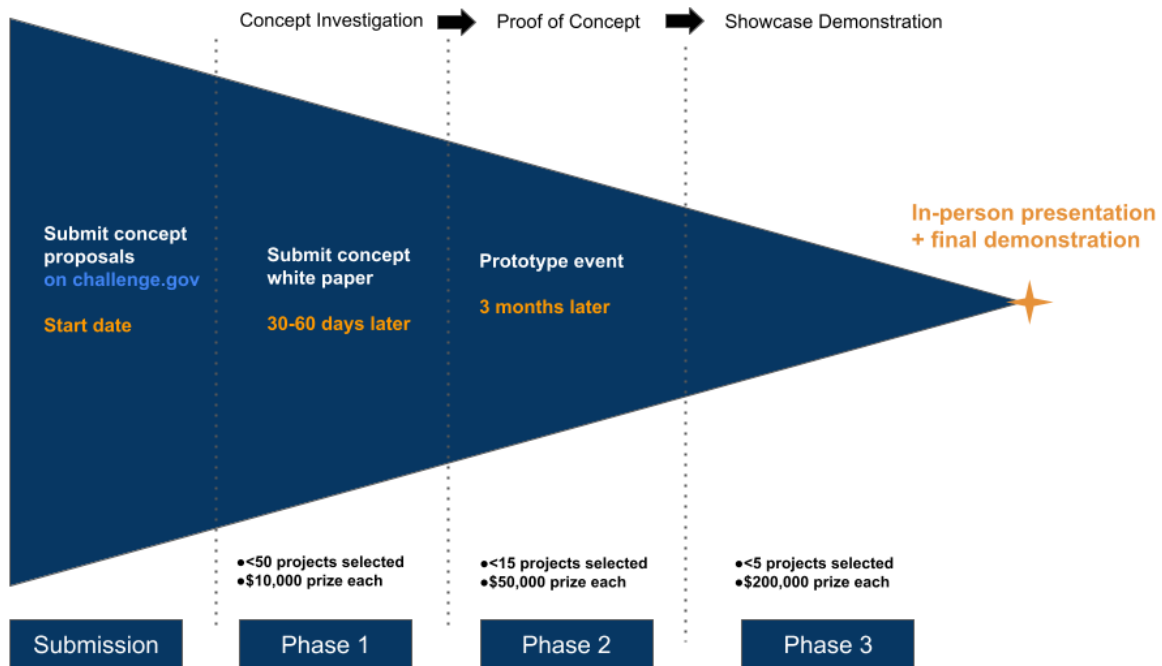
Contracts and grants are the predominant, traditional government funding instruments, but they have several disadvantages in addressing the large-scale challenges facing CEQ. Both instruments are procedurally cumbersome for new entrants, overly complicated, and very slow (sometimes well over a calendar year just for submission

and award). We recommend the NEPA incubator use prize competitions as an alternative mechanism to fund and scale NEPA environmental tools.

Prize competitions are more advantageous for CEQ and environmental agencies dealing with the types of problems we observed during this path analysis. Prizes [are unique compared to other types of federal agreements](#). Primarily, they are not rooted in a “compliance first” approach, but instead are designed to maximize funding for solving problems immediately. Prize competitions participants do not have to register in SAM.gov, which can itself take months. They are not required to use specific accounting systems and methods dictated by the Cost Accounting Standards Board (CASB). The primary restriction on prize competitions is the imagination and ingenuity of the government agency using them.

Prize competitions also have greater freedom than traditional funding instruments in regards to appropriation law. For example, depending on the agency, once funding is designated for any prize competition, appropriated funds can “roll over” past the initial obligation period regardless of the original type of appropriation. Prize competitions can also be structured to include funds or other resources, such as physical equipment or datasets, from private entities, to supplement any government funds. It is not uncommon for prizes to include blended funding from both private and public sector stakeholders, making it an ideal, and lightweight way to create private-public partnerships (PPP).

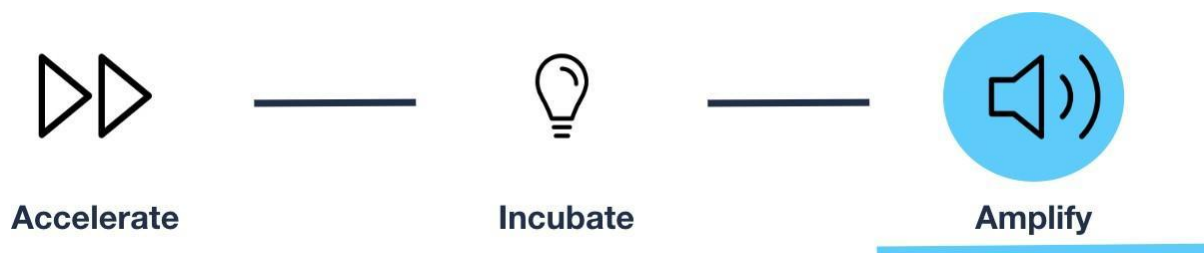
Countless federal agencies have successfully used prize awards to fund innovation projects. Some notable examples include [DOE](#), [DARPA](#), and [USAID](#). 18F recently consulted with NASA’s Science and Technology Mission Directorate (STMD) to establish two new prize programs, [NASA ’s Tech Leap](#) and [TechRise](#), that have yielded great benefits to maturing technology and advancing the agency’s missions (in ways that were not achieved using traditional agreements).



*Nominal structure for the types of Prize Competitions CEQ should consider.*

CEQ and a NEPA incubator committee should explore the programmatic requirements for creating a NEPA Prize pilot, budget for prizes and pilots, and an execution plan for a preliminary prize (to determine the viability of including it in CEQ’s workflows). Several federal agencies specialize in supporting prizes for other agencies, adopting a fee-for-service approach, such as [NASA’s Center of Excellence for Collaborative Innovation \(COECI\)](https://www.nasa.gov/coe) and [GSA’s Challenge.gov](https://www.challenge.gov) (in addition to numerous private sector alternatives).

## CEQ as amplifier



CEQ as a policymaking organization is well suited to identify and help set standards to remove the ambiguity around NEPA compliance, scale the usage of programmatic agreements for cross-agency collaboration, and amplify the benefits of the new changes being made for broad adoption. To support such initiatives, CEQ will need to adopt some new practices.

### Programmatic agreements as the norm

Processes and agreements are needed as much as technologies and tools. Standard agreements enable and ease the automation of manual processes and reduce administrative burden. Programmatic agreements, such as interagency agreements to coordinate certain reviews under NEPA and other authorities (e.g., Endangered Species Act section 7 and National Historic Preservation Act section 106), should become the norm, instituted across all agencies, to mitigate repetitive “back and forth” actions at the federal and state levels. The [Electric Transmission Interagency MOU](#) and USDA Natural Resources Conservation Service (West Virginia) are examples in flight.

The groups we spoke to understand the benefits of agreements but lacked the time and resources to research or create their own. A research project specifically aimed at understanding the current state of agreements and the lessons learned would help provide a template for future frameworks. As well as research, the Permitting Council should help identify areas where agreements could benefit current projects. CEQ and the Permitting Council are critical for guiding agencies through forging contracts.



## Invest in signal amplification

Diverse stakeholders, accelerated renewable energy growth, and fear of litigation complicate the narrative surrounding compliance. CEQ, as an extension of the White House, has the opportunity to become more proactive and use its influence and resources to demystify and reduce some of the confusion that has become common about compliance. Investing in additional capacity to effectively craft messaging, create marketing materials, and publicize the approved standards, environmental priorities, and process changes would reduce a lot of the misalignment occurring at the federal and state levels and the public perception. The ultimate goal of the marketing communication efforts should be to increase awareness of the streamlined processes, the prize award competition, and the available support resources to comply with NEPA successfully.

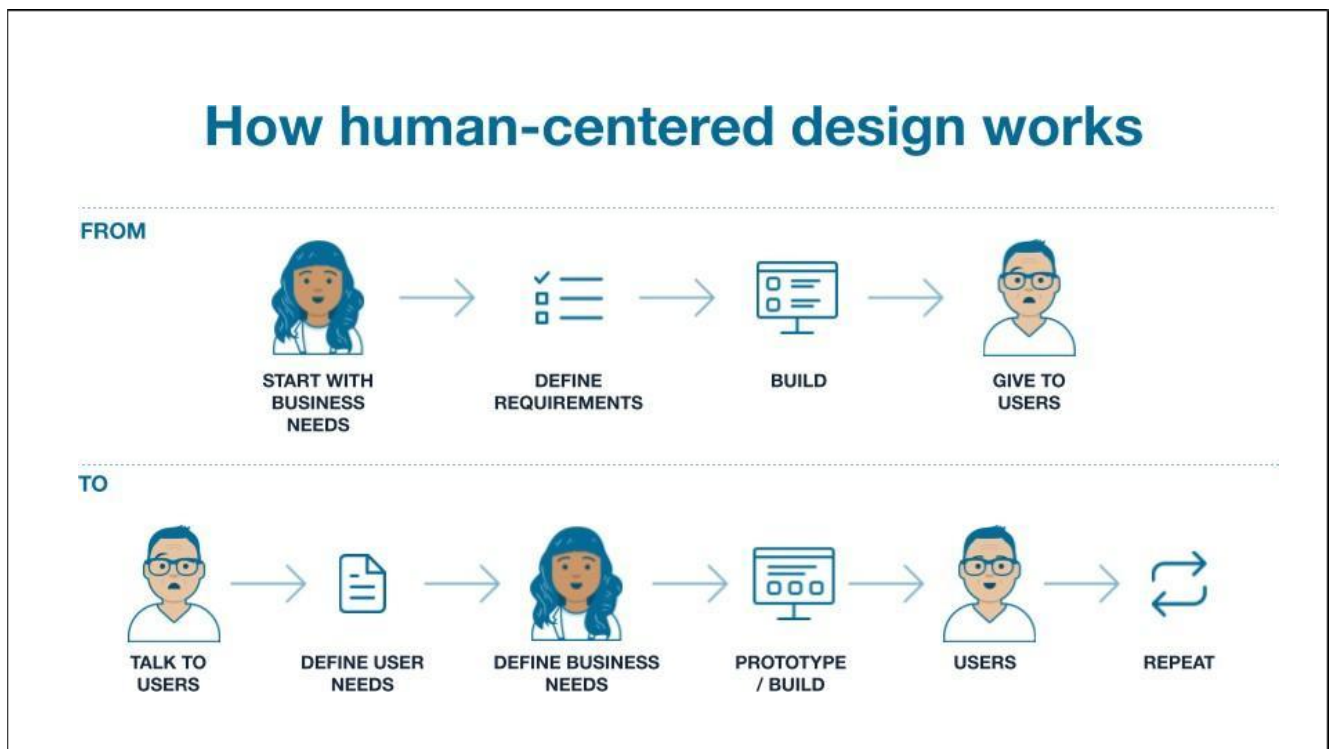
Although marketing and communication are one-sided communication channels, the marketing and communication strategy should be informed by any human-centered research collected to ensure timely messaging and serve users' needs.

# Next steps

## Conduct product discovery

To increase the use of repeatable processes that can improve the efficiency and effectiveness of the NEPA process, CEQ will need to conduct further research to identify where standard document templates are needed, where training gaps exist and where permitting procedures and programmatic agreements could help.

This work will require that CEQ initially invest in staffing resources that can conduct further product discovery work in a human-centered fashion.



Through the continued use of human-centered design (HCD) practices, CEQ will better understand agency practices and stakeholder needs. This understanding will help uncover the highest value opportunities to pursue, and define and prioritize the most suitable efforts. Ultimately, HCD will enable CEQ to deliver a set of actionable outcomes validated by users.

Product discovery is crucial to delivering successful technology, experiences, or products and requires a commitment of time and resources in research and discovery. CEQ needs to spend time validating problems of users and processes used by agencies to issue permits to identify ideas that can resolve the issues at hand. CEQ should make this investment early, when the costs and risks of prototypes are low. We recommend that CEQ prioritize the following discovery workstreams and cross-functional staff to support:

Discovery workstreams:

1. Data and content modeling
  - a. 1 content designers conduct content/applications audit and data modeling research by agency.
  - b. 1 information architect to develop a taxonomy.
  - c. 1 engineer to map the architecture and data models and ensure that mapping can be ingested or leveraged in tools relying on relational databases.
2. Standards and Playbooks
  - a. 1-2 technical writers to create user friendly documentation of guidelines, templates, and playbooks in plain language.
  - b. 1 content designer to support the information architecture, web, and/or graphic design elements needed.
  - c. 1 front end engineer to build and deploy the playbook as a static website.
  - d. 1 user researcher to identify the agencies performing a lot of the NEPA actions and the current state of how they conduct their processes.
3. Training materials
  - a. 1 instructional designer that can create multi format training materials.
4. Marketing materials
  - a. 1 marketing communication specialist that can create PR material and digital marketing materials.
5. Programmatic agreements
  - a. 1 user researcher to identify existing programmatic materials, context of use, and repurpose.
  - b. 1 policy expert to work cross agency to develop standard programmatic agreements.
6. Scaling collaboration tools
  - a. 1 user researcher to audit available collaboration tools/methods by agency, confirm constraints and identify opportunities to scale.

- b. 1 engineer to audit available collaboration tools/methods by agency, confirm constraints and identify opportunities to scale.
- 7. Academic Partnerships
- 8. 1 CEQ staffer to identify regional academic institutions to create working relationships.
- 9. Advise on setting up an incubator
- 10. Suggested staffing:
- 11.2 senior staff technologists with specialized experience in standing up digital technology programs in the federal government.

Most of these roles should be staffed at a mid to senior level due the complexity of the environmental reviews and multi-stakeholder ecosystem that will need to be navigated. These HCD roles should be the primary hires of any CEQ digital strategy team, so that they can adequately conduct discovery work, create content, and standardize data that can later be consumed by any system that later gets built. In essence, by spending time defining processes, the HCD team will lay the foundational building blocks for future tool development.

18F may be able to support a few of these efforts. We recommend scheduling a follow up with the Business Development team to discuss and scope an engagement.

# Appendix

## About 18F

18F is a digital consultancy housed within the General Services Administration. It aims to help government agencies deliver exceptional digital experiences by practicing human centered design, shipping often, and deploying products in the open.

## Methods

18F's engagement with CEQ began with a week of onboarding and quickly shifted into research around the challenges with the federal permitting processes. 18F conducted 14 interviews with various stakeholders who indicated the issues that were most important to them. 18F synthesized research outcomes and focused on helping CEQ identify user centered ways to approach their work. The final culmination of this engagement is this recommendation document.

**Desk Research:** We conducted in-depth reading of relevant policy and stakeholder documentation to understand the overall ecosystem that users are working in. This allowed us to contextualize what we're learning from stakeholders and users.

**Stakeholder and User Interviews:** We conducted a wide-spanning set of semi-structured interviews with anyone who had an interest in the project's success, including users. This allowed us to identify user needs early to find key insights that could shape next steps, goals and direction.

## Metadata

Existing EPA metadata standard

- Title
- Author (currently noted as the organization that developed the file)
- Subject
- Keywords

## Additional suggested metadata

- Related documents (if any)
- Version (if any)
- # of embedded objects (if any)

## Additional metadata suggested by Environmental Policy Innovation Center (EPIC), Federation of American Scientists and NEPAccess

(Reproduced from EPIC\_FAS\_NEPAccess Comments on CEQ NPRM, September 29 2023, Docket number CEQ-2023-0003)

### **Unique identifiers**

Require a unique identifier for each process, which is associated with each document in the project from Notice of Intent to draft to final to ROD and supplementary documents.

### **Standardized NEPA process classification taxonomy**

Provide and require the use of a standardized taxonomy for process type, decision type, and action type for each NEPA process.

- Process type is the type of NEPA process that is being undertaken, such as an EIS or EA.
- Decision type (as described by current § 1508.1):

### **Policy**

Rules, regulations, and interpretations adopted under the Administrative Procedure Act, 5 U.S.C. 551 et seq.; or other statutes; implementation of treaties and international conventions or agreements, including those implemented pursuant to statute or regulations; formal documents establishing an agency's policies which will result in or substantially alter agency programs.

## **Plan**

Official documents prepared or approved by Federal agencies, which prescribe alternative uses of Federal resources, upon which future agency actions will be based.

## **Program**

A group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive.

## **Project**

Construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as Federal and federally assisted activities.

## **Legislative**

The detailed statement required by law to be included in an agency's recommendation or report on a legislative proposal to Congress.

Action type (examples): 1. Conservation/Restoration, 2. Recreation, 3. Cultural/Historical, 4. Economic and Urban Development/Commerce, 5. Water Works, 6. Waste Management, 7. Mineral Resource Extraction, 8. Biological Resource Use, 9. Energy generation/transmission, 10. Transportation, 11. Government Facilities/Siting, 12. Military Operations, 13. Law Enforcement/Security, 14. Science/Research

## **Geospatial information**

- Polygons. Require EIS/EA documents to include geo-JSON (or equivalent) polygons (shapefiles) for project area/footprints, each proposed alternative, and, where practicable, project impacts (e.g., air, water, noise).
- Geospatial metadata. Require EIS/EA documents to include additional canonical metadata fields, including: Geospatial coordinates and location tags (text-based). Additional standardized metadata to describe relevant polygons.

**Public participation metadata**

Require EIS/EA documents to include public outreach methods, dates and locations of public meetings, number of people in attendance at each meeting, and number of comments received during scoping and during draft and final review.

**Supporting data, documents, and analyses**

Submit consultant data, documents, and analyses to a centralized repository, with relevant project metadata linked to the process's unique identifier. These include appendices, consultant "Baseline reports," "Supplemental reports," and "Technical reports."