

Appendix 5 to CEQ's E-NEPA Report to Congress: 18F Feasibility Study

Feasibility of a cross-agency permitting tool

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Introduction

The following text is a resource for CEQ as they consider the feasibility of a unified portal described in Section 110 of the National Environmental Policy Act (E-NEPA) as follows:

1. *allow applicants to—*
 - a. *submit required documents or materials for their project in one unified portal;*
 - b. *upload and collaborate with the applicable agencies to edit documents in real-time, as required;*
 - c. *upload and display visual features such as video, animation, geographic information system displays, and three-dimensional renderings; and*
 - d. *track the progress of individual applications;*
2. *include a cloud based, digital tool for more complex reviews that would enhance interagency coordination in consultation by—*
 - a. *centralizing, across all necessary agencies, the data, visuals, and documents, including but not limited to geographic information system displays, other visual renderings, and completed reports and analyses necessary for reviews;*
 - b. *streamlining communications between all necessary agencies and the applicant;*
 - c. *allowing for comments and responses by and to all necessary agencies in one unified portal;*
 - d. *generating analytical reports to aid in organizing and cataloguing public comments; and*
 - e. *be accessible on mobile devices;*
3. *boost transparency in agency processes and present information suitable for a lay audience, including but not limited to—*
 - a. *(A) scientific data and analysis; and*
 - b. *(B) anticipated agency process and timeline*

For clarity, we will be referring to this unified Federal agency NEPA portal as a “cross-agency permitting tool” hereafter. This section provides CEQ with some observations and considerations before pursuing a cross-agency permitting tool.

Our research on this topic has been high-level and focused largely on the electric transmission sector. Further targeted research may be needed to determine the best “first bets” for functionality to better support the permitting process through a cross-agency permitting tool should CEQ pursue such a tool. However, the risks associated with such an endeavor were highly observable and unavoidable at this time.

Therefore, 18F does not recommend that CEQ pursue, or attempt to acquire, a cross-agency permitting tool at this time.

Instead, 18F has provided a Path Analysis report on recommendations for CEQ to pursue at this time as a separate document. While 18F does not recommend a cross-agency permitting tool be developed at this time, section 110 of NEPA tasked CEQ with studying “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)) including, but not limited to, a unified permitting portal.” Such a tool could support the complex needs of permitting.

However, the feasibility of a cross-agency permitting tool is *not* a technological challenge, but largely an operational one. Building a tool that could support the complex needs of multiple agencies’ permitting processes is technically possible, in terms of modern software coding. However, the size, scope, and complexity for such a cross-agency permitting tool makes the pursuit of one to be a high-risk activity, and would need considerable resources to adequately avoid, reduce, and mitigate those risks. Without adequately addressing those risks, such a project would fit the well-established profile for [government IT project failure](#).

A cross-agency tool of this size will only be as effective as the program that supports it. Given this, we consider the feasibility of such a tool to be a programmatic or operational question rather than a technical one. Such a program would require stable, reliable, and consistent funding sources paired with sufficiently experienced and skilled permanent staff who would be able to ensure successful implementation of a production grade system (of the type required for a cross-agency permitting tool).

The following are observations and considerations for CEQ to address *before* it decides to pursue a cross-agency permitting tool.

Ownership

CEQ's current staff is roughly 60 legislative, legal, and environmental policy experts, but it would take a cross-functional team of government software engineers, user experience designers, product managers, acquisition professionals, and others who have the requisite experience building and operating digital systems and programs of the envisioned size, scope, and complexity of such a portal. Rather than hire all of those personnel, 18F recommends a blended approach whereby key personnel are in-sourced to CEQ and they partner with a digital service or agency that would, ideally, be equipped to staff and support robust programs and digital technology teams. This model has been demonstrated before with tools that are owned by the Office of Management and Budget or cross-agency advisory groups and managed by agencies such as Health and Human Services ([HHS](#)), the General Services Administration ([GSA](#)), and Department of Labor ([DOL](#)).

Even with an agency partner to manage implementation, CEQ's leadership would be required for several years to drive cross-agency adoption and for ensuring that the "team" operating it has the autonomy, resources, and usage needed for its success.

Adoption and change management obstacles

User adoption is the only thing that will drive the improved data fidelity needed to increase transparency and understanding of how the permitting process can be improved. Historically, there have been challenges with adoption and change management with other attempts at centralizing permitting workflows at the federal agency level. Two sources for these challenges that are frequently cited are lack of effectiveness, a signal that insufficient user research was conducted before tools were introduced, and typical resistance to change from the targeted users, meaning Federal agency NEPA staff, as well as project applicants, and the public at large depending on the context.

One critical driver of this resistance from agency staff is concern for the protection of the fidelity of their assessment work. The agency staff who review permits are frequently responsible for understanding the impact that the permitted work would have on the

human environment. This responsibility combined with the risk of legal challenges to their decisions means that there is some protectiveness of the processes by agency staff that can lead to resistance to change.

The permitting process is incredibly complex and demands for increased transparency have actually increased the complexity of it over time, which is reflected in the existing tools and processes currently in use. The net effect is an increase in the reporting burden for all parties involved. This is a fundamental tenet of service design and user research that would need to be incorporated at the very beginning for any cross-agency permitting tool. Otherwise, the result will be a perpetuation of inconsistent usage, fractured data, and lack of traceability for permitting.

Timeline

To stand up a program of the scale needed to support a cross-agency permitting tool would take several years, at least 2 years for the user research, coding, and operational deployment. For comparison purposes, 18F's work with past agency partners such as the [U.S. Forest Service Permitting Christmas Tree Harvest Permit Tool](#), [DOJ Civil Rights Portal](#), and [U.S. Tax Court](#) all required approximately 2 years from conception to production. While some initial staffing could be done from existing staffing pools such as the U.S. Digital Service and 18F, there would be a need to hire programmatic and technical talent at CEQ and with a partner agency to support and sustain the program long-term.

Further, any digital tool hosted by the federal government will require additional reviews and approvals. Depending on whether such a tool resides at a cross-agency level, it would require an Authority to Operate (ATO), and because it would likely be cloud-based technology, that means it would need to achieve a FedRAMP certification which relies on a cross agency panel of CIO's, called the Joint Authorization Board, rather than a singular agency CIO. FedRAMP certifications rely on a third-party auditor (3PAO) to review security standards set by the National Institute of Standards and Technology (NIST)'s as required by the Federal Information Security Management Act of 2002 (FISMA). The current standard is 800-53 Revision 5 which has over 120 different types of security controls depending on the appropriate security level. It is not uncommon for the ATO process itself to take half a year or more.

Risk reduction

To ensure success in terms of **reducing friction** to the permitting process and **not adding friction**, it's critical that this digital service is user-centered and data-driven design¹ and follows the guidance of the [21st Century Integrated Digital Experience Act](#) (21st Century IDEA). In order to reduce the risk of failure to meet the needs of users, this system would need to be built using an iterative and incremental development methodology.

Iterative and incremental development

From a software perspective, the list provided in Section 110 constitutes different “features,” and many of the features listed are incredibly complex to develop and implement technically, such as incorporating GIS or 3d imagery. Each of these individual features could take months or even years of concerted software development effort to achieve. Historically, the government undertaking such a feature-rich initiative would provide that list upfront in a singular contract to a single contractor to develop, which is called the “waterfall model” and is responsible for the current government IT failure rate of over 80% of software projects. Iterative and incremental development is a way to reduce the likelihood of such a total failure and deal with feature-rich systems. This includes not only the itemized list of Section 110 but also the different types of permits that exist under NEPA which each would add to the potential complexity and variation to be addressed.



¹ [21st Century Integrated Digital Experience Act](#) (2018)

The needs of the permitting space are expansive and range from document sharing to commenting and GIS technology. Ideally, the first tools created by this program would be narrow in scope with a measurable impact to help understand the “best next bets” for iterating on the program and adding features over time.

Some examples of early, low risk activities could be:

- A front door for applicants within a narrow set of less complicated permit types (to be determined). This would exclude the most complicated permit processes at first, such as those that cross state and local jurisdictions, reducing the risk of interfering in those processes before having a tested tool that has been iterated on;
- A tool that attaches a unique identifier (UID) and descriptive front matter(metadata) to permits for agencies to improve data consistency and cross-agency tracking; or
- A commenting tool that could be used when applications reach the commenting phase.

However, the initial tool **should not:**

- aim to serve the entire permitting process; or,
- aim to serve all permitting types.

Operational needs

Customer Experience (CX)

The 21st Century Integrated Digital Experience Act, and the subsequent 2021 Executive Order on Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government are essential authorities and provide the starting point for any considerations of a cross-agency permitting tool. Based on our experience, a tool of this type would likely have different subsets of users with distinct CX needs, such as:

- Public facing CX (what the public can see about NEPA);
- Applicant facing CX (Applicants for agency permits, funding, or authorizations); and
- Agency staff facing CX (Staff preparing NEPA documents and processing permits).

Whether the “starting point” would be with the public, applicant, or agency facing sides of the tool, the scope would depend on the shape of the initial considerations and decisions yet to be made. Using incremental and iterative development methods would help reduce overall risk for the program. Excellent information on such considerations is available in this [Customer Experience Toolkit](#).

Program Management Office

A cross-agency permitting tool would require a program management office (PMO), which would include additional supporting staff such as budgeting, human resources, communications, procurement, and other essential roles for public-facing programs. Where such a PMO would reside depends on the decision discussed in the Ownership section above.

Funding

Digital programs need time to prove success. Success can be determined by factors such as user adoption, feedback, quantitative qualitative analysis on the impact of the program on the larger ecosystem it inhabits, and other analytics. However, even when using proven risk reduction methods like iterative and incremental development methodology, it can take two to five years to gain the metrics needed to measure success through these data points.

Given the estimated two – five-year timeline needed to understand impact, a program of this scale would need a strong and stable funding source for this ‘start-up’ phase. Additionally, some guarantee of a more reliable long-term source of funding, such as a dedicated budget line item, would be needed for its long-term maintenance and growth.

Based on 18F’s work with other agencies developing federal systems from scratch and putting them into production, like the U.S. Tax Court’s [DAWSON](#) system, our very rough initial estimate would be an annual seven figure budget for operations.

18F would recommend using Agile development methods, the predominant and most successful of these being Scrum, if development of a cross-agency permitting tool were undertaken. To get started, we always recommend a single Scrum team of no more than 10 cross functional members, typically 6-9. In our experience, the estimates for such a team considering hourly labor rates dictated by the market, the number of working hours in a year, and the number of people in the team, would have a cost of somewhere between \$1.2 to 4 million a year (depending on the outcome of a competitive proposal and evaluation process).

Also consider the necessary apparatus on the government side to run a program and properly administer and oversee such a Scrum team, likely requiring another 6-10 full time employees for product ownership, communications, and various business functions. Additional costs to consider include hosting and security authorizations to maintain (e.g., an ATO). As the Defense Innovation Board stated, “Software is never done” and so appropriate planning and resourcing should be fully considered and ensured before proceeding with such an undertaking.

Conclusion

While 18F does not recommend the development of a cross-agency permitting tool at this time. Our assessment is that such a cross-agency permitting tool *could* be built, in the same way that the highest mountains of earth have been successfully climbed, but it requires the requisite level of preparation and operations to succeed. These observations and considerations are just some of the initial ones that would need to be adequately addressed before the undertaking of such a high-risk development effort.