18F

OGP / OMB

Performance.gov Discovery Recommendations

March 20th, 2018

Introduction

Performance.gov is a transparency and accountability website that provides a window into how federal agencies function and perform. The site is mandated by the Government Performance and Results Act Modernization Act (GPRAMA) of 2010, is managed by Performance Improvement Council (PIC), and overseen by the Office of Management and Budget (OMB).

Originally, the creation of Performance.gov was not driven by or designed for specific user needs. With less than 30,000 hits per year, it was not clear that the site had identified an audience or addressed a clear need beyond fulfilling the legal requirement to exist.

In the fall of 2017, PIC/OMB brought on 18F to conduct user research and help develop a strategy for the future of Performance.gov.

In the first phase of the engagement, called a *Foundation Engagement*, we identified a range of target users and opportunities that Performance.gov could serve. At the end of the engagement, PIC/OMB and 18F concluded that **researchers and journalists** were the users most likely to use performance information and most capable of disseminating knowledge about the inner workings of government to the broader public.

In the next phase, called *Discovery*, we dug deeper into the specific needs of researchers and journalists. Within this user group, we focused on the issues pertaining to three agencies, each with distinct characteristics: Social Security Administration (SSA), Housing and Urban Development (HUD), and Department of Commerce (DOC). We then reached out to researchers and journalists who specifically covered those agencies and related topics to understand their perspectives in detail. We conducted user interviews, developed hypotheses about what needs we could best serve, developed a series of prototypes to test our assumptions, and in the end, came to understand their needs from a variety of perspectives.

In this report, we will review our approach and findings. We will then make specific recommendations that Performance.gov can implement to better serve researchers and journalists.

Executive summary

18F conducted interviews and prototype testing sessions with journalists, think tank researchers, academics, and members of the performance management industry. From the observations made in those sessions, we identified ways to significantly improve the way users engage with performance information.

We found:

1. Performance information is often too dense.
2. The impact of performance goals is not always clear.
3. The government performance framework doesn't make sense to people who are not already immersed in the language of performance management.
4. Performance data lacks documentation and support.
5. Performance data is used to support existing narratives.
6. The raw data behind performance indicators is often inaccessible.

We recommend:

1. Focusing on information architecture, way-finding, and navigation.
2. Strengthening the site's visual communication.
3. Providing contextual clues that can teach users about the performance framework.
4. Making performance data accessible with downloadable and well documented datasets.
5. Linking performance information and graphics to their underlying data.
6. Connecting to additional datasets to help researchers and journalists align multiple data sources for their work.

We believe many of the recommendations outlined in this report can be applied to the existing interim website, but most functionality will require significant changes to the existing site and incorporating additional technologies. We've also made recommendations to PIC, OMB, and to the agencies reporting their performance to ensure best practices are in place to support the long term sustainability of Performance.gov.

Action plan

The following table provides a summary of the recommendations that can be implemented in the initial *Build* phase. For the details on all our recommendations, see the Findings & Recommendations section. Final prioritization of the recommendations will occur at the beginning of *Build*, incorporating the long term roadmap.

Priority	Focus area	Recommendation for Performance.gov	Example of immediate steps
1	Information architecture and language	• A scannable goal page • Improved information architecture, wayfinding, and navigation	• Focus on DOC, HUD, SSA's existing performance reports • Restructure and redesign how agency reports are displayed on website • Develop user tests to evaluate improvements to usability
2	Finding and filtering	• Searching and filtering	• Complete first pass at re-structuring documents in a searchable format • Provide essential, but limited, filter options in search interface • Evaluate feasibility of existing taxonomies
3	Indicators and data	• Provide links to raw data • Evaluate data visualization strategy	• Focus on DOC, HUD, SSA's existing raw data • Work with agencies to get raw data or, if needed, scrape data from existing reports • Perform regular usability tests for indicators page • When possible, provide direct download to raw data on website and measure usage
4	Supporting documents	• Identify data sources for charts and graphics • Link to supporting metadata	• Focus on DOC, HUD, SSA's existing supporting documents • Provide links to supporting documents within agency reports • Conduct usability tests to determine if existing approach to supporting information is adequate

The following table provides a list of immediate steps for PIC/OMB that will support the implementation of our initial recommendations in the *Build* phase.

Focus area	Recommendation for PIC/OMB
Information architecture and language	• Provide adequate staffing resources to ensure agency staff are providing content that has been validated through usability tests • Work with a content specialist to develop guidance to improve content and the content process
Indicators and data	• Work with a data and schema specialist to investigate how structured data can be provided by agencies
Supporting documents	• Work with a content specialist to develop practices that ensure agencies provide quality supporting documents
Finding and filtering	• Work with the Performance.gov team to ensure that any performance-related taxonomies developed by PIC/OMB are compatible with new Performance.gov

Problem statement

Many researchers and journalists have trouble using government performance information because it is **dense**, it is not presented in a **meaningful way**, and it lacks **reusable supporting data.**

Our vision

Performance.gov can help researchers and journalists **analyze**, **communicate**, and **illustrate** the impact of government performance to the broader public by providing **clear information** that is supported by **reusable data**.

Research approach

18F uses semi-structured interviews and prototype tests to better understand how different user groups interact with the proposed functionality of Performance.gov. These methods work well to uncover behavior and implied needs, while helping inform the potential direction for the future of the platform.

Research sessions were structured with the following guidelines:

- Sessions were between 45-60 minutes long.
- We captured interviews via note-taking, making sure to remove any personally identifiable information (PII) and sensitive information from our final documentation.
- Sessions were held either via teleconference, video chat/screen sharing, or in person, depending on the locations and connections of individual interviewees.
- All participants signed an Electronic consent form prior to sessions.
- At the start of each session, participants were reminded that the conversation was voluntary and informed them that they were free to discontinue the conversation at any time.

In this project, we worked to understand a few key concepts:

- What, if any, government performance information are researchers and journalists currently seeking?
- How might these needs be met by Performance.gov?
- What does the long-term success for Performance.gov looks like?

From earlier research, we know that there are several potential audiences, including journalists, non-governmental organizations (NGO), lobbyist communities, Congress, and performance managers in government.

During *Discovery*, we focused on the questions that would help frame the correct path forward for a future iteration of Performance.gov.

Objectives	Tactics
Understand researchers and journalists' organizational goals	Ask about the researcher and journalist's organization's goals, outputs, and outcomes. Analyze outputs referenced.
Understand researchers and journalists' comfort levels and capacities	Investigate complexity or roughness of the information sources currently being used. Understand processes and tools used in analysis by researchers and journalists.
Estimate researchers and journalists' likely trust in the data	Probe issues that ensure or erode trust in a data provider for researchers and journalists.

Methodologies

Phase 1 — User interviews: Exploration of researcher and journalist needs

1. Develop list of outreach targets: researchers and journalists that might conceivably be interested in the type of information Performance.gov could contain.
2. Recruit individuals from these lists and interview them based on predefined question guide, revising and honing the questions as we learn.
3. After each interview, debrief with the team on visible patterns.
4. On a weekly basis, synthesize the results of the week's research, adjust outreach materials and question guides.

Phase 2 — Hypotheses: Develop hypotheses based on user interviews

1. As a team, review notes, patterns, and takeaways from each interview, paying special attention to extract interesting and relevant notes, pain points, and opportunities.
2. Using a bottom-up organizing technique, known as affinity diagramming or the KJ method, organize the list of areas of interest, pain points, and opportunities into themes and develop a statement to summarize the theme.
3. Based on the themes, develop a list of 3-6 hypotheses that will allow you to test with prototypes.

Phase 3 – Develop tests to validate hypotheses with users

1. Review research from phase one and two to develop concepts that may be representative of eventual needs.
2. Prioritize concepts to test and develop activities that would allow us to test those concepts using various scenarios.
3. Develop prototypes (mockups, conversation probes, and activities) for researchers and journalists to interact with to support the testing script.
4. Identify 3-5 participants for each workflow/scenario, and schedule 45-60 minute blocks of time with the participants to test.
5. Conduct the sessions, with 30-minute team debriefs immediately following.
6. Synthesize results and develop recommendations.
7. Adjust the prototypes and, if necessary, the research plan accordingly.

User groups

There are several potential audiences of Performance.gov, including journalists, non-governmental organizations (NGO), lobbyist communities, Congress, and performance managers in government. After the *Foundation Engagement*, we focused on understanding the needs of researchers and journalists in more detail. Over time, the characteristics and differences between these two types of users became clearer.

It is often easy to lump similar users together, but it is important to understand that the motivations of different users may have a significant impact on the features and functionality prioritized in a product.

User	**Characteristics**
Researcher	● Works at a university, think tank, or advocacy organization ● Alternates between working in government and outside of government ● Works at an organization funded to influence government via reports and policy recommendations ● Has perspectives on government systems and processes ● Work influences other researchers, journalists, and policymakers
Journalist	● Focused on identifying corroborating information to support story ● Interested in uncovering issues that impact their readers (or supporting someone with this goal) ● Rarely focused directly on government performance as an issue

Findings & Recommendations

Outlined below are key observations from our study, followed by recommendations based on those observations. If implemented, these recommendations will help address the challenges that we've identified through our observations. Our observations can be organized into two overarching themes — *Meaningful performance* and *reusable data*.

Theme #1: Meaningful performance

Researchers and journalists are unable to extract meaning from information and data that is currently presented on Performance.gov.

Observation #1: Performance information is often too dense.

The performance information that is relevant to researchers' and journalists' work is often buried in a way that forces them to **dig through a lot of content** to find what they need. Frequently, this requirement to dig presents a substantial barrier to entry for understanding, particularly for deadline-driven users. The following are other specific user needs:

1. Researchers and journalists need a quick, accessible **summary of the goal** to know if the goal they found is relevant to them.
2. Researchers and journalists need to know what the **trend (increasing, decreasing, or flat) of a performance goal indicator** is quickly to gather valuable context about the performance strategy they are reviewing.
3. Researchers and journalists need to know **how progress towards a goal has changed** since the last update so that they can focus on what is most relevant.
4. Researchers and journalists need to see at a glance if the performance information is **current or from a previous performance cycle**.

Observation #2: The impact of performance goals is not always clear.

Researchers and journalists cannot always understand why a goal is important and why it is a government priority. The following are other specific user needs:

1. Journalists need clear, plain language government performance goals tied to specific, understandable metrics—**not too high-level or abstract**—if they are to see goals as relevant to their readers.
2. Researchers and journalists want information that can help them understand **why specific goals are important**.

Observation #3: The government performance framework doesn't make sense to people who are not already immersed in the language of performance management.

Researchers and journalists tend to look for information based on **topic area or subject matter** (rather than by agency) and they want to tell **stories over time**, spanning across fiscal years and performance cycles. Because of this, many of these users **don't feel the need to understand GPRA** or how government actions fit into strategic plans and performance goals. The following are other specific user needs:

1. Researchers and journalists need the ability to **filter information** in a variety of ways because they are focused on telling stories that are tied to topic areas or subject matter as opposed to a particular agency or goal level.
2. Journalists need to understand how a particular **goal, objective, or indicator fits within GPRA** and the agency's mission and strategic plan so they can connect it to how the government talks about performance.
3. Researchers need to understand how **goals and metrics change over a range of time spans** in order to make meaningful connections. These do not necessarily line up with performance cycles or fiscal years, and may reference periods outside the term of any president.

Performance.gov recommendations for theme #1

The Performance.gov team should:

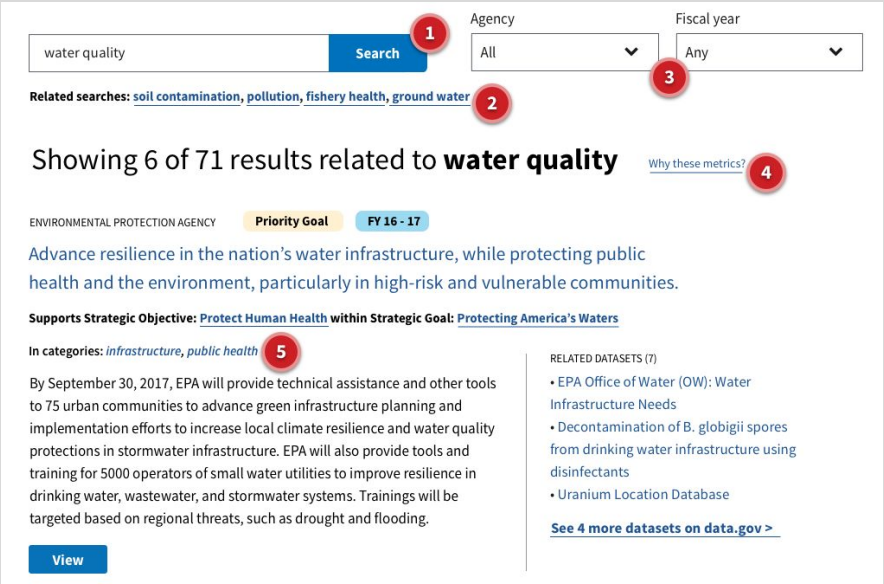
1) Focus on Performance.gov information architecture, wayfinding, and navigation

Researchers and journalists tell stories connected to their audiences lives and pull in information from different sources to support that story. Because of this, performance information relevant to their needs must be easy to find. This means that the information can't just be tied to the performance framework context – it must also be findable and understandable from their current knowledge frame *and by* public-interest

topics. In order to accomplish this, **we recommend re-envisioning the site's information architecture, wayfinding, and navigation to ensure that clear pathways exist to allow researchers and journalists to find information pertaining to their needs**.

How this might be accomplished:

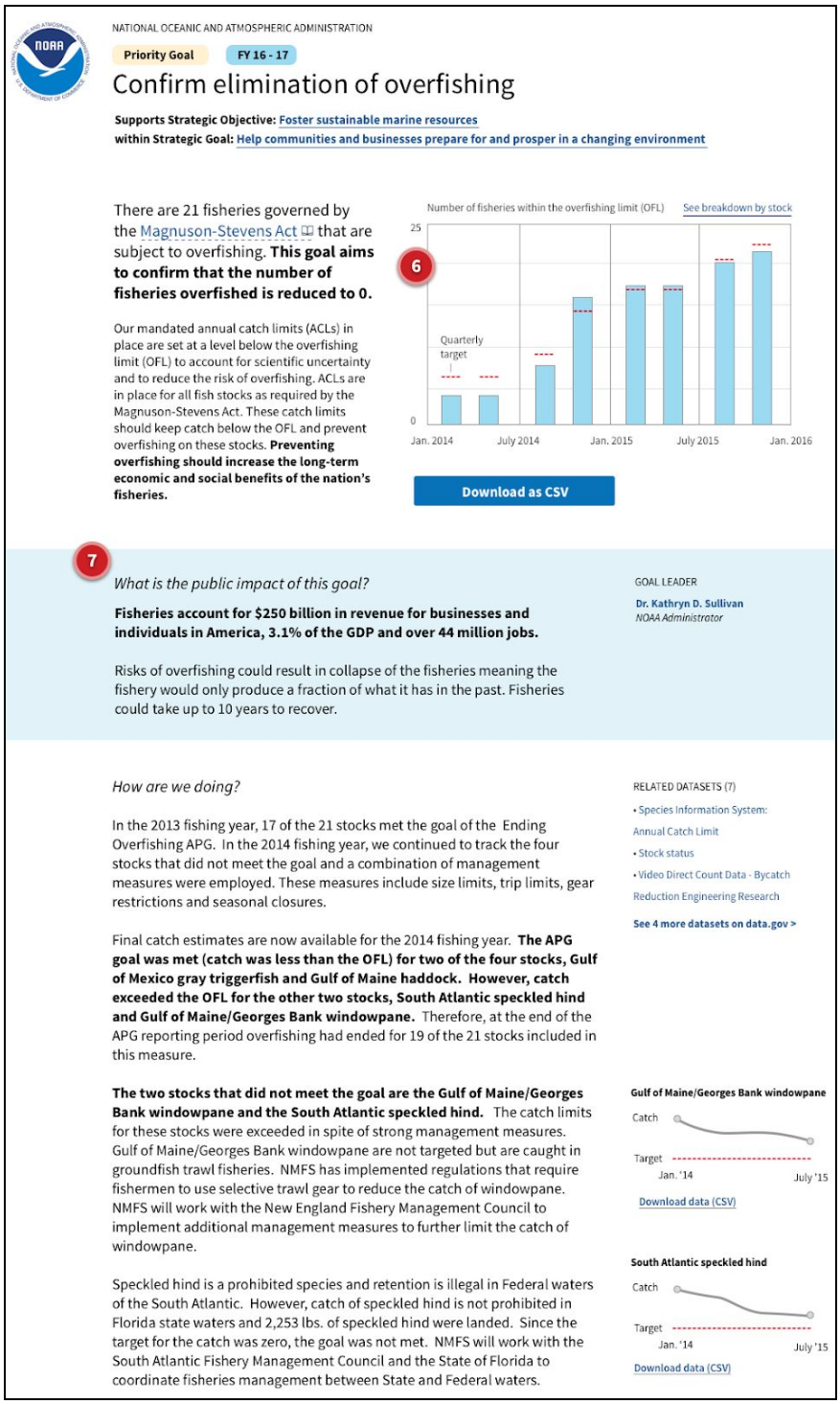
Fig. 1: Conceptual sketch of a search results page



Note: All images provide examples and interpretations for the recommendations below. They are not final recommendations and are bound to change.

- Allow **searching across agencies, objectives, goals and indicators (1)** in a single interface so researchers can find all relevant information within the performance universe.
- Provide **related search terms (2)** so researchers and journalists learn of different ways to find relevant content.
- Allow **filtering by agency, fiscal year, entity, report type, categories, and tags (3)** so that researchers can focus on a specific set of parameters and understand the universe of performance information available to them.
- Design, test (with researchers and journalists), and deploy an **information architecture, landing experience** and **navigation that provide clear pathways (4)** to the performance information most relevant to researchers and journalists.
- Provide **related topics/tags (5)** so researchers and journalists can find related content that may not have been clear or obvious.

Fig. 2: Conceptual sketch of a priority goal page



- Design **a scannable indicator page (6)** so that the user can understand, at a glance, what the indicator is, what goal it relates to, and who is working on the goal.

- Design **a scannable goal page (7)** so that the user can understand, at a glance, what the goal is, what agencies are working on the goal, and how progress is being tracked (metrics/indicators).

Technical considerations for this recommendation:

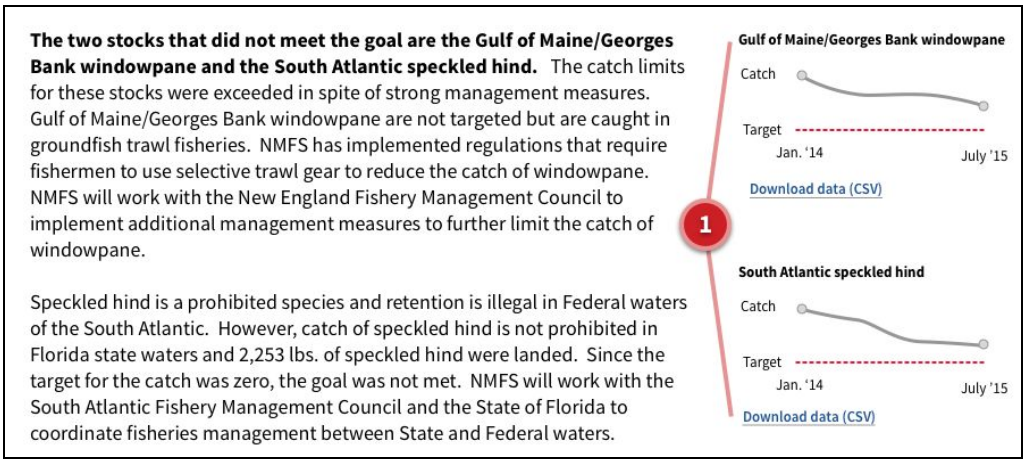
- The goal page depends on agencies providing up-to-date performance information. Currently, OMB and the Performance.gov team have a process for updating the interim site. We suggest starting with the existing process and iteratively adding information as needed while concurrently improving the updating experience for OMB and agencies. This could start as a CSV upload or a manual process with a CSV import.
- Searching and filtering requires a look-up in a database of some kind. This *could* be done with JavaScript on the existing Jekyll-based website, but can quickly becomes cumbersome. Using a relational datastore with full-text search support may be the easiest way to accomplish this.
- Maintaining relationships of performance goals with their strategic goals, objectives, etc. is done with a relational datastore.
- If related search terms are generated based on user behavior, the search terms need to be actively tracked in some kind of datastore.

2) Strengthen the site's visual communication

The federal government is large and complex. Agencies do a significant amount of work and cover a broad range of topics in order to craft performance goals that align with a specific federal agenda. However, researchers and journalists frequently don't have time to sift through hundreds of pages of PDFs to understand what the government's strategy is on a particular topic or issue. We recommend providing visual cues and summaries to **make performance information more scannable** so that users can quickly find information that is relevant to their work.

How this might be accomplished:

Fig. 3: Conceptual sketch of a sparkline summary of indicators



- **Use charts, visualizations, sparklines, and simply worded summaries (1)** of the data to quickly provide context. These elements can reveal if the underlying data is interesting to the user.
- Evaluate, from a data visualization perspective, the **kinds of metrics agencies release** in their performance reports. From these, **iteratively build and test** a set of easy to understand and accessible charts that can help users understand the data.

Technical considerations for this recommendation:

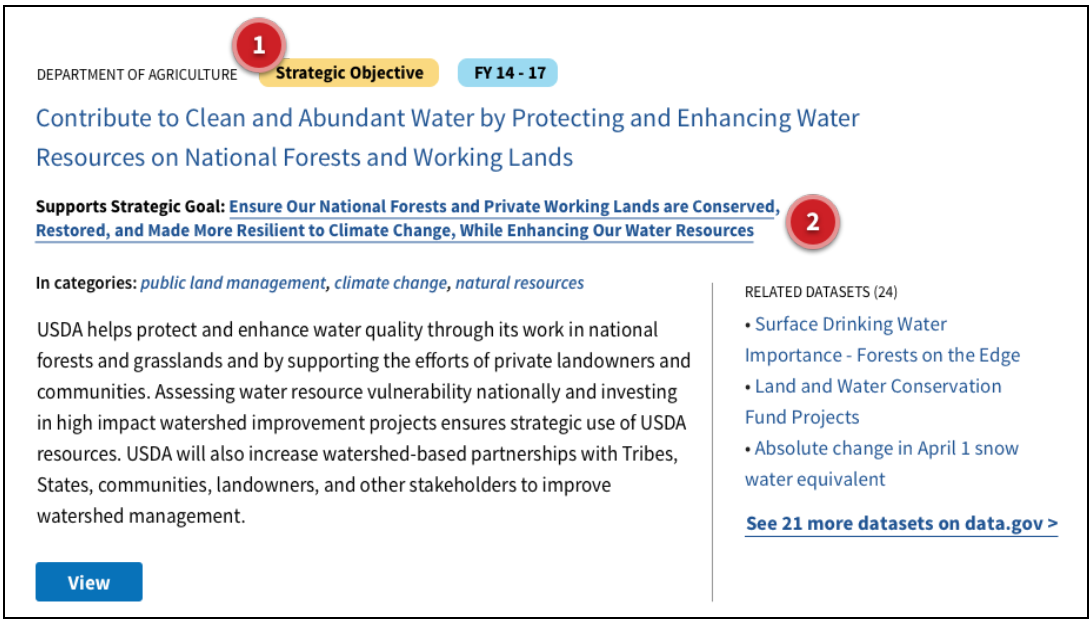
- OMB has started investigating a shared service for visualizations, called Data to Decisions (D2D). These visualizations can be embedded in Performance.gov.
- Creating charts, visualizations, or sparklines would require access to the data in raw or summarized form.
- With the interim site, there's no indicator data provided by agencies. With the legacy system, this was done in PREP where agencies had to enter each data point in a form. During the *Foundation Engagement*, we found this was a rather cumbersome process for agencies. Further investigation is needed here to understand more about the data that agencies are using and what agency capabilities are to provide this data in a summarized, machine-readable form. We think that starting with some kind of simple CSV upload would be a reasonable effort from agencies.

3) Provide contextual clues to teach users more about the performance framework

Pulling performance information out of the performance framework helps researchers and journalists access this information, but it doesn't help the public understand how the government sets goals and tracks progress against those goals. By embedding key performance framework concepts into the content, researchers and journalists will be able to initially wade into the performance pool rather than being thrown into the deep end.

How this might be accomplished:

Fig. 4: Conceptual sketch of how to provide contextual knowledge



- **Highlight performance framework terms (1)** in site content and link them to their official and plain language definitions.
- Provide links to **related content within the performance framework (2)** so researchers and journalists can quickly move between items they may be interested in.

Technical considerations for this recommendation:

- A relational database would help keep track of how different performance framework nodes (strategic goals, objectives, performance goals, etc.) are related.

- 18F has a glossary library that could be used to highlight terms and link them to definitions.

Organizational recommendations for theme #1

To make this possible, agencies should:

- Summarize the performance goal's story in a **quick and visual manner**.
- Highlight a goal's **recent progress** in a way that is easy to digest.
- Explain the **impact** of a goal's success or failure.
- For decentralized agencies, provide access to more granular performance goals of **individual bureaus or offices** that focus on individual programs.
- Use **plain language when defining the goal**. Be specific and clear about the topics that journalists cover so that information is meaningful to them.
- Tie goals to indicators in a way that clearly illustrates how this goal **measures value to the public**.
- Make performance information meaningful **outside of the performance framework** to make it easier for researchers and journalists to use it in their work.

OMB can support them by:

- Collaborating with the Performance.gov team to develop templates that provides structure to the performance reports for agencies to use.
- Developing content design guidance that helps agencies craft grounding information for goals and indicators, and supporting agencies as they craft it.
- Making user-friendly content design a required part of the OMB/PIC sign-off process.

Theme #2: Reusable data

Performance data is not **reusable.**

Observation #1: Performance data lacks documentation and support.

Researchers and journalists — especially those with high data capacity — depend on **good metadata and documentation** to be able to use data with confidence. **Having**

contacts within agencies with whom they could ask questions also helps fill in gaps in understanding. The following are other specific user needs:

1. Regardless of whether the data is public or not, **researchers need visibility into which data sources** agencies are using to measure goals.
2. Researchers and journalists need the data and its **metadata** to understand how they can and cannot use it to report their own stories.
3. Researchers and journalists need a **human they can contact** to ask questions about a dataset, including how the data was collected, the quality of the data, and any caveats about the data or data process. This is not necessarily the goal leader.

Observation #2: Performance data is used to support existing narratives.

Researchers and journalists **cobble together** performance and non-performance data; government and non-government data; old and recently updated data; and public, semi-public, or non-public data. If the information to support their research does not exist, they often spend significant time creating and managing custom datasets to help tell their story. The following are other specific user needs:

1. Researchers and journalists need to connect data from a **variety of sources** in order to support their research or to tell a story.
2. Researchers and journalists need **longitudinal data** (data over long time spans) in order to tell a coherent story over years or decades.
3. Researchers need the ability to tie performance outcomes to **funding sources** to study agency resources and efficiency.

Observation #3: The raw data behind performance indicators are often not accessible.

The charts and diagrams provided in existing reports lack direct linkage to the underlying data. Without access to underlying data, researchers and journalists do not trust high level summaries. The following are other specific user needs:

1. Researchers and journalists need access to **downloadable raw data** so they can use it to validate conclusions using their own tools and processes.
2. Even if the raw data is not public, researchers and journalists need **information about available data sources** so that they could request access via other means, like a MOU or FOIA.

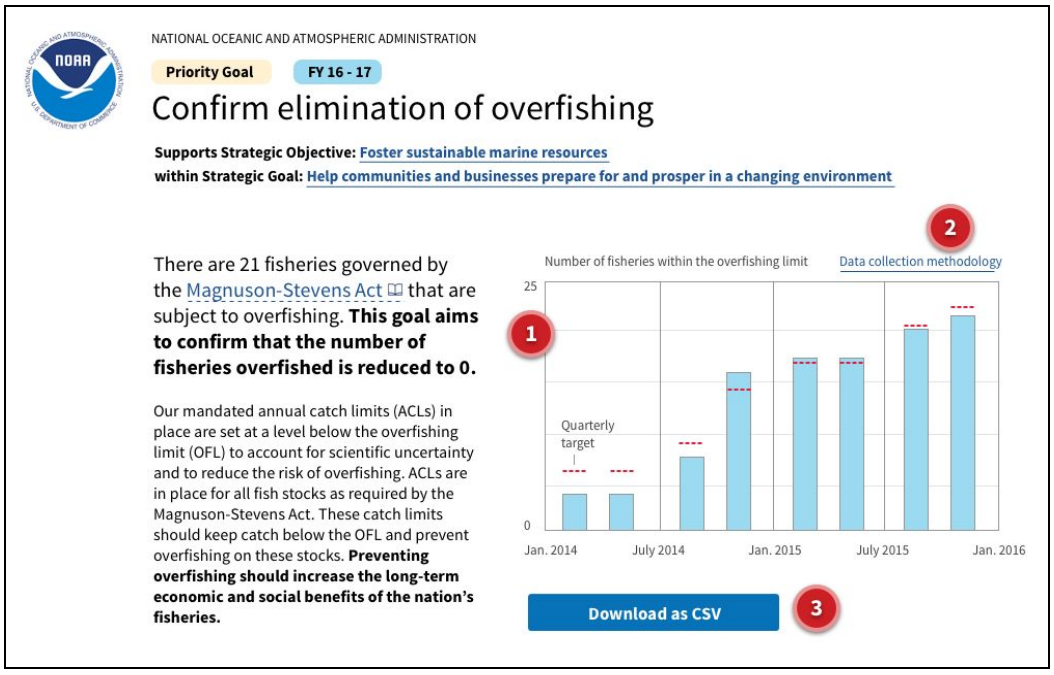
Performance.gov recommendations for theme #2

1) Link performance information and graphics to their underlying data

Charts and graphics help summarize and highlight information, but researchers and journalists need supporting evidence to help them tell their stories. These users work under the overarching principle of "show, don't tell." Without supporting evidence, they can't use performance information in their work. **We recommend providing raw data linked from any highlights or summary information** so that researchers and journalists can corroborate the government's performance story.

How this might be accomplished:

Fig. 5: Conceptual sketch of goal page



- Present **charts and graphics as an at-a-glance view (1)** into a dataset while also providing a link to the original data source.
- Identify the data sources of any graphics, and **link to additional metadata (2)** and information.
- On every page that displays goal indicators, be sure to provide a **link to raw data (3).**

Technical considerations for this recommendation:

- If performance datasets were cataloged using Project Open Data's Metadata Schema, Performance.gov could pull in this information and present it to the user. Additionally, a link to the data source could be provided if the metadata lists the dataset as public.
- Summarized data used for visualizations could be provided by CSV download if no raw data exists. This would require storing the summarized data in some kind of datastore.

2) Provide metadata and data collection details for performance data to establish trust and aid analysis.

Researchers and journalists need to support their work with reliable and credible information. Information that's credible typically includes a well-documented collection process and metadata describing the frequency at which the data is updated, how to use the data, and who to contact about the data. **We recommend providing available metadata and documentation** alongside any indicators so researchers and journalists can determine if they can reuse the dataset.

How this might be accomplished:

- Provide **metadata directly on the website**, including contact information, description of headers, details of the data collection, data reliability, and frequency.
- Use automated scanning to **detect when links break** and report them to agencies.

Technical considerations for this recommendation:

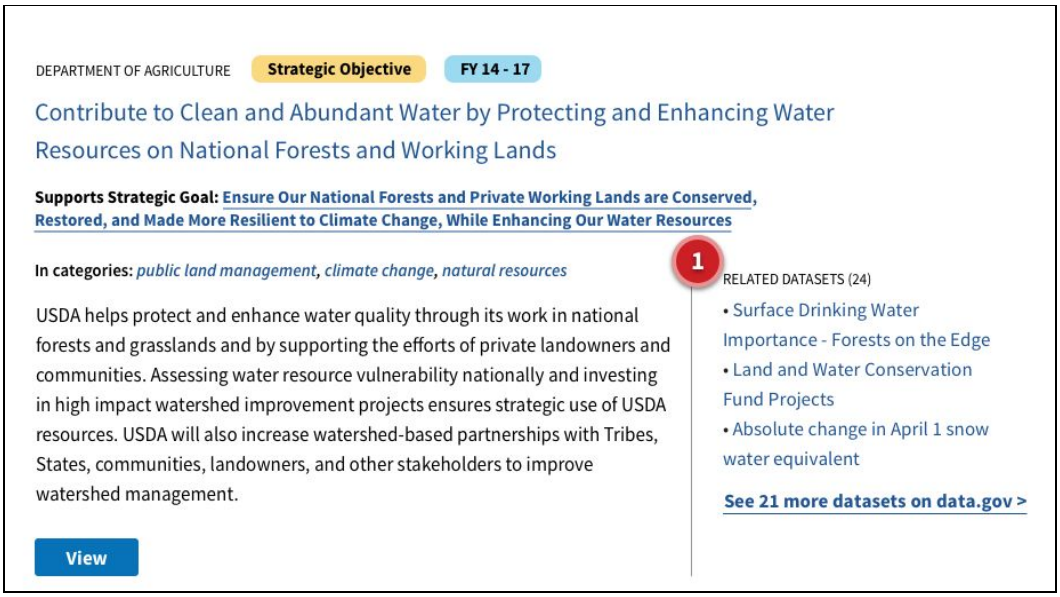
- If datasets were linked to their metadata on Data.gov, this information could be pulled in and presented on Performance.gov automatically.
- Data.gov provides a mechanism to test for broken links. This is probably sufficient for our purposes. Otherwise, an automated, regularly scheduled task could email notifications to agencies when a broken link is detected.

3) Connect performance data to additional datasets to help researchers and journalists align multiple data sources for their work.

Researchers and journalists don't discriminate against data sources. If the data is accessible, relevant to their work, and credible, they will use it. We've observed users getting data through a variety of methods: public data, MOU, FOIA, scraping, paying a third-party for it, and even creating it when no other source exists. **Leaving clues on how datasets relate to each other** helps researchers and journalists pull more performance information into their work.

How this might be accomplished:

Fig. 5: Conceptual sketch showing related datasets



- Provide a **list of related datasets (1)** with links to their metadata or data source on goal and indicator pages.
- Link **related goals between fiscal years** and performance cycles (when applicable) in order to see government actions across time.
- Link current indicators to **past indicators when goals change** or are related.
- Avoid deleting any performance information. Instead, make **historical versions** of goals and indicators available to help connect information over time, even within a single fiscal year. If indicators change, include the past version as a related indicator.
- Display **funding sources** alongside goals when possible.

Technical considerations for this recommendation:

- Agencies would need to provide metadata or links to metadata for related datasets.
- Linking goals between fiscal years would require that agencies connect current goals to previous goals or define a series of goals that are related across years.
- The system should keep track of edits or changes to goals and indicators so that previous versions can still be displayed to users.
- More investigation is needed around funding sources, what kind of data is relevant to users, and how that should be presented.

Organizational recommendations for theme #2

To make this possible, agencies should:

- **Provide contact information** for people who can answer questions about the data being collected.
- Catalog all performance data sources even if the **data source is not public** using published metadata.
- When possible, datasets used for **performance should be open data** and accessible to the public.
- Use cio.gov's **metadata definition** to describe performance datasets.
- **Publish metadata** so that Performance.gov can easily consume it and present it to users.
- Publish metadata on services like **data.gov** so that performance data can be found more easily by researchers and journalists.

OMB can support them by:

- Identify challenges that agencies may face in publishing open data and work with the Performance.gov team to address them.
- Decide on the metadata required by agencies and provide guidance to agencies about including metadata for any performance data they use for indicators.
- Provide guidance around indicator visualizations so that any charts or graphs are using best practices.
- Investigate using a shared service, like D2D, for providing indicator visualizations so that all visualizations are consistently produced.
- Continue working on the Federal Program Inventory. This could aid users trying to connect performance information with programs and budget data.

Recommended strategy for MVP

A minimum viable product (MVP) is a learning tool built with working software that addresses a narrow set of needs for real users. The Performance.gov MVP should incorporate a prioritized subset of our recommendations. Once recommendations are prioritized, the MVP will help us repeatedly build, measure, and learn in short iterations.

This would best be accomplished by building on a new platform focused around a back end with a relational database that could provide an API. The specific technology choice is not particularly important in addressing our recommendations. We can incorporate aspects of our recommendations into this platform to validate they are solving the needs of our users. This platform should:

- Incorporate all existing agency performance framework information (strategic goals/objectives, performance goals, and indicators) available on the interim website, organized based on our recommendations.
- Focus on the goal and indicator pages.
- Incorporate search or filtering.
- Focus on a subset of agencies (DOC, HUD, SSA) to go beyond performance information currently available on the interim website.
- Work with a content specialist to design performance information with this subset of agencies.
- Work with agencies to get their performance data incorporated and identify processes to keep their performance information up to date.
- Design a new experience derived from the US Web Design System to highlight the visual impact of performance information.
- Conduct regular usability sessions with researchers and journalists.

For more on the recommended strategy, refer to our action plan.

We believe there is great potential for Performance.gov to provide transparency and engage the American public in the actions of government. What we've outlined above are long-term recommendations and concrete next steps that can shape the future of Performance.gov. By applying these recommendations, Performance.gov can help agencies communicate their goals more effectively and improve public visibility and understanding of the functioning of the federal government.

Appendix

- Initial prioritization workshop
- Research plan and materials
- Interview notes
- Weekly ship reports
- Designs and mockups
- Evaluations of prior art
- Performance Coalition presentation
- Synthesis of interviews
- Prioritization of hypotheses
- Prototype questions based on hypothesis
- Prototype experiments
- Example of a prototype prompt
- Summary of final workshop
- Break down of recommendations
- Final presentation & workshop
- Long term roadmap