

Making NIH web  
services fully accessible  
to search engine users

Implementing the Sitemap protocol

# Sitemaps.org

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An open, industry standard for web search engine crawling



## What are Sitemaps?

Sitemaps are an easy way for webmasters to inform search engines about pages on their sites that are available for crawling. In its simplest form, a Sitemap is an XML file that lists URLs for a site along with additional metadata about each URL (when it was last updated, how often it usually changes, and how important it is, relative to other URLs in the site) so that search engines can more intelligently crawl the site.

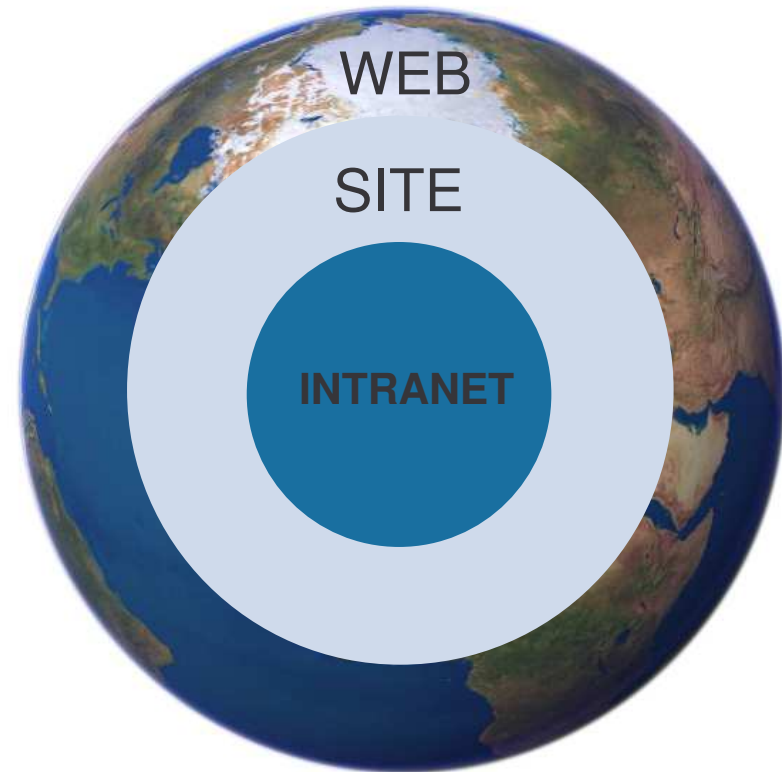
Web crawlers usually discover pages from links within the site and from other sites. Sitemaps supplement this data to allow crawlers that support Sitemaps to pick up all URLs in the Sitemap and learn about those URLs using the associated metadata. Using the Sitemap [protocol](#) does not guarantee that web pages are included in search engines, but provides hints for web crawlers to do a better job of crawling your site.

Sitemap 0.90 is offered under the terms of the [Attribution-ShareAlike Creative Commons License](#) and has wide adoption, including support from Google, Yahoo!, and Microsoft.

# Clarifications

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- Non-proprietary
- No direct cost—nothing for sale
- No security risk
- Web search, not site search (e.g. Google Search Appliance)
- Public content only



# Web search vs. site search

Supporting the two levels of search



All of the open and accessible deep web	<b>Search scope</b>	A segment of your public sites' content
Citizens and professionals	<b>User</b>	Professionals and citizens
Search engine crawling intervals	<b>Freshness</b>	Customizable
Limited by robots.txt, dynamic content	<b>Crawling</b>	Limited by server capacity and cost
High-level stats	<b>Reporting tools</b>	More detailed, all facets
Free	<b>Cost</b>	Varies

# Citizens increasingly access government through web search engines

## National Institutes of Health (nih.gov)

- More than 70% of unique users in July 2006 were referred by web search engines (Google, Yahoo, MSN, AOL, Ask)

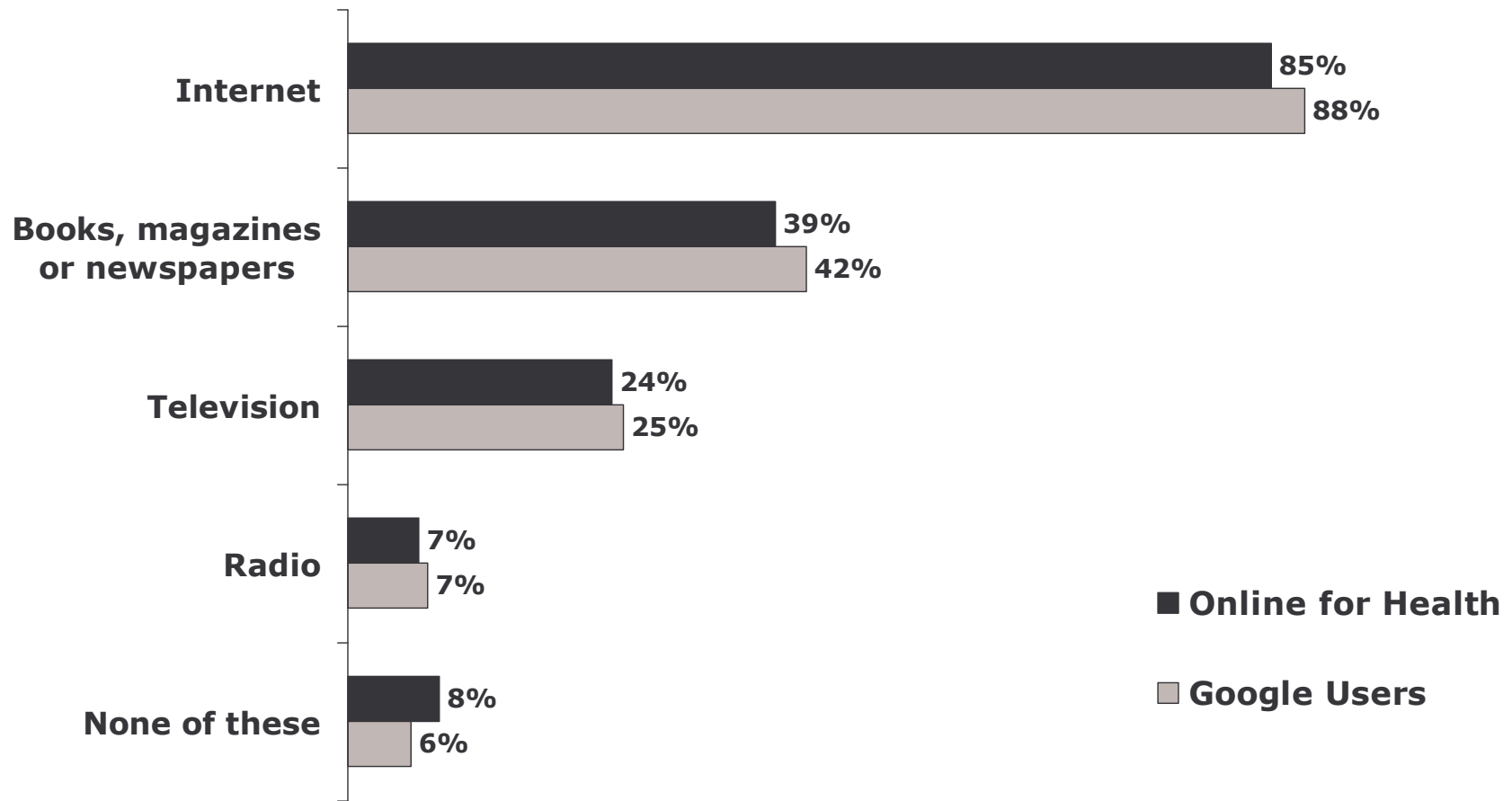


- Only 4% of unique users came directly to nih.gov sites

Source: ComScore, 2006

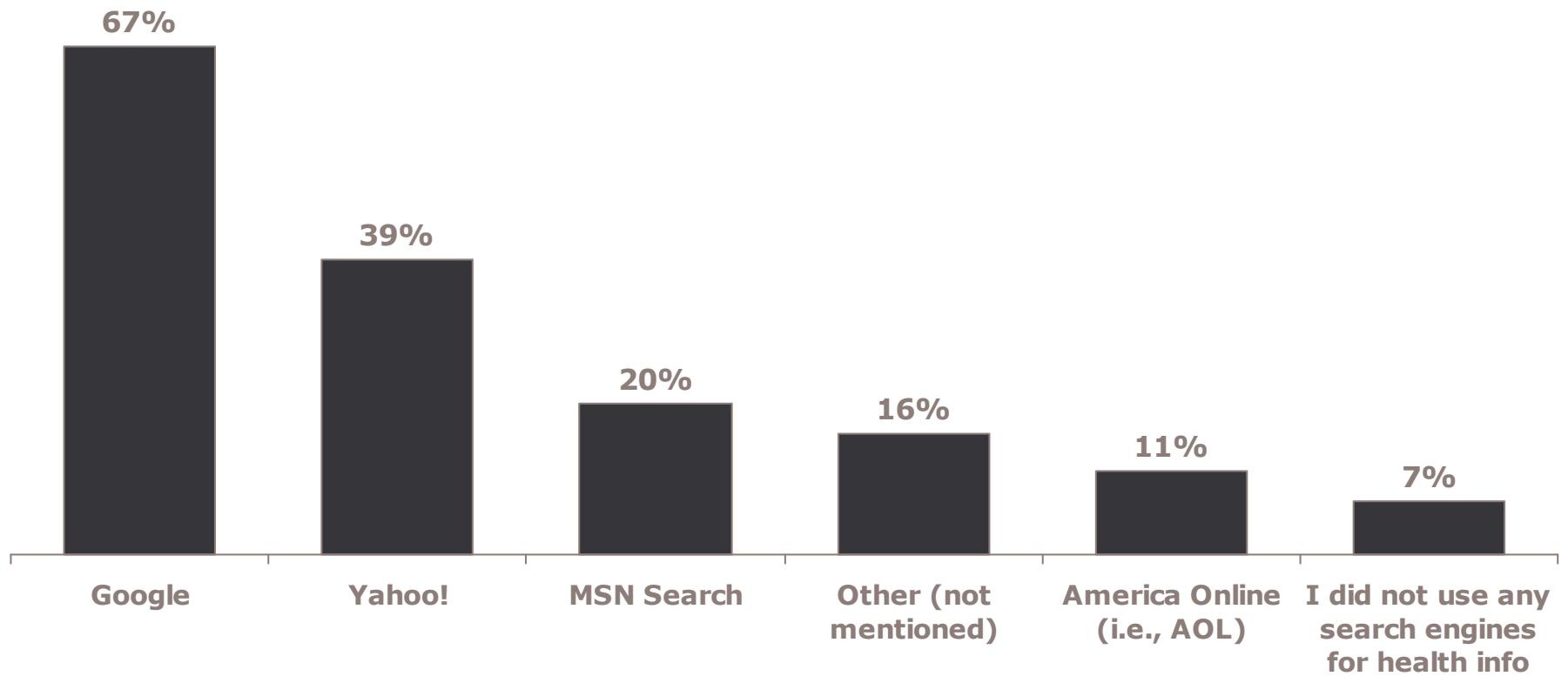
# The Internet is the Leading Media Source of Health, Medical, and Prescription Drug Information

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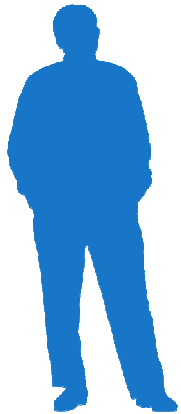
# Search Engines Used When Looking for Health Info Online

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# Web search engines are the point of departure, government sites are the destination

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**Federal**

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 **Internal Revenue Service**  
DEPARTMENT OF THE TREASURY



**State**

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 **virginia.gov**



**Localities**

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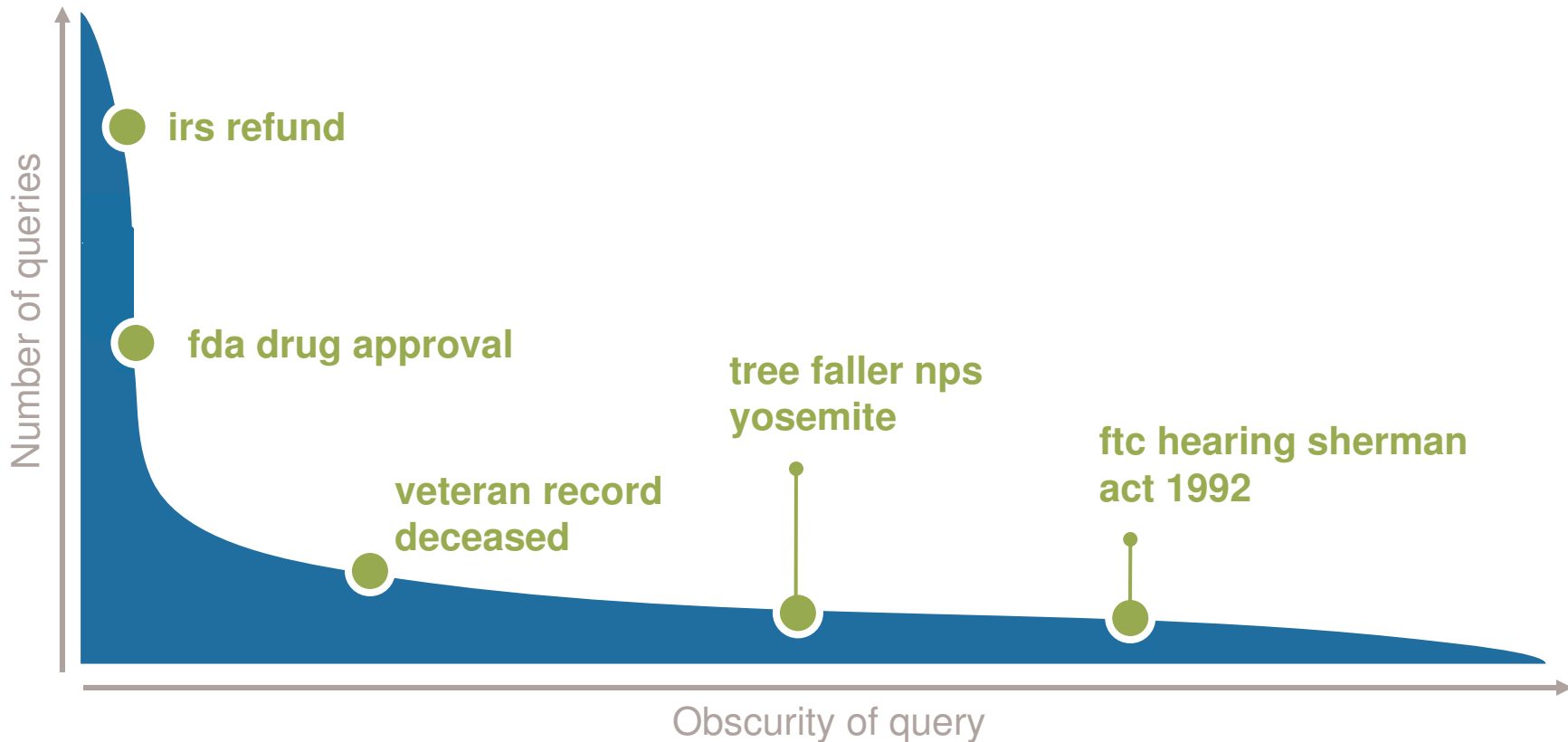
  
**King County**

  
**City of Dallas**



# And they expect to find everything

The long tail of federal government information

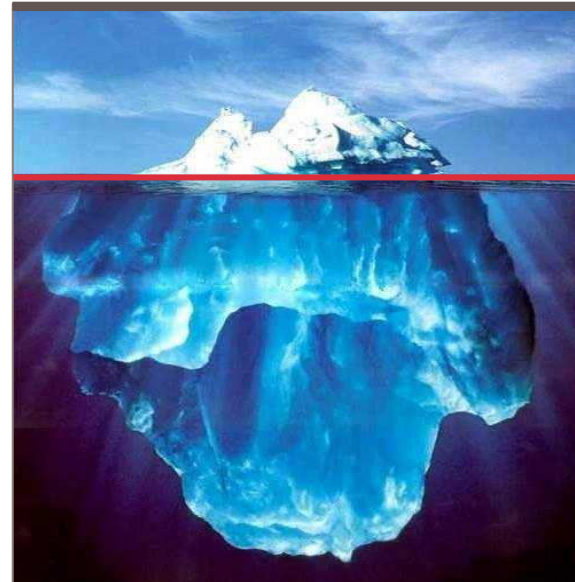


# Barriers to web search engine crawling

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What can make a site effectively invisible to search engine users

- Content “hidden” behind search forms
- Non-HTML links
- Outdated robots.txt crawling restrictions
- Server errors (crawler times out when fetching content)
- Orphaned URLs
- Rich media: audio, video
- Premium content



**WEB**  
Searchable

**DEEP WEB**  
Not searchable

# Crawlers cannot navigate search forms

## When crawled

[Home](#) → [Business Services](#) → Search database

### Business Services

- [Search database](#)
- [Search 4B7 database](#)
- [Search the archives](#)
- [Database info](#)
- [Choosing a Business](#)
- [Resource Links](#)
- [Online Forms](#)
- [Fee Schedule](#)
- [Legal matters](#)
- [e-Filing](#)
- [e-Filing your forms](#)
- [e-Filing reports](#)

### Search Our Database

Welcome! This page allows you to enter in a name, and retrieve the information you are looking for.

Name:

Results per page: 10

-or-

Case #:

[Corporate search info](#)

**Liability Statement:** While we make all reasonable efforts to ensure the accuracy of information contained on this website, we make no representation or warranty as to the correctness or completeness of the information.

[Home](#) | [Site Map](#) | [Contact Us](#)



Database Search Results

Searched john smith Results 1 - 10 of 385

Case #	Status	Type	Name
<a href="#">37848</a>	Inactive	Legal	SMITH, LIMITED
<a href="#">125560</a>	Inactive	Legal	SMITH AND CO., INC.
<a href="#">246812</a>	Active	Legal	SMITH & COMPANY, INC.
<a href="#">144521</a>	Inactive	Former	SMITH & ACKLEY, INC.
<a href="#">256753</a>	Active	Legal	SMITH & ASSOCIATES, L.L.C.
<a href="#">37787</a>	Active	Former	SMITH & ASSOCIATES INSURANCE SERVICES, INC.
<a href="#">252270</a>	Active	Legal	SMITH & CARSON, INC.
<a href="#">187233</a>	Inactive	Fictitious name	SMITH & HATCH, INC.
<a href="#">181647</a>	Inactive	Legal	SMITH & HDLTKAMP, P.C.
<a href="#">179923</a>	Inactive	Legal	SMITH AND JONES INC.

Result Page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [Next](#)

[Home](#) | [Site Map](#) | [Contact Us](#)

**Search results are invisible**

# The solution: Sitemaps

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The Sitemap protocol enables a web publisher to proactively manage web search engine crawling



“The launch of Sitemaps is significant because it allows for a single, easy way for websites to provide content and metadata to search engines”

—Tim Mayer, Senior Director of Product Management, Yahoo Search

“We are 100% behind this protocol -- this kind of collaboration will help improve the search experience for all of our customers”

—Ken Moss, General Manager, Live Search

- Sitemap protocol developed by Google in June 2005 and released under Creative Commons License
- Adopted as an industry standard in November 2006: [www.sitemaps.org](http://www.sitemaps.org)

# Navigational sitemap

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A browse index or sitemap enables a user to navigate throughout a site

**SITE INDEX**

*To view or print the PDF content on this page, download the free [Adobe® Acrobat® Reader®](#).*

<b>NEWS</b>	<b>OFFICES</b>
<a href="#">Treasury Deputy Secretary Kimmitt Travels to Asia this week to Discuss Compact with Iraq</a>	<a href="#">Office of Domestic Finance</a>
<b>KEY TOPICS</b>	<a href="#">Debt Management</a>
<a href="#">General Interest</a>	<a href="#">Advanced Counterfeit Deterrence</a>
<a href="#">Law Enforcement</a>	<a href="#">Office of Financial Institutions</a>
<a href="#">International</a>	<a href="#">Federal Financing Bank</a>
<a href="#">Taxes</a>	<a href="#">Financial Institutions</a>
<a href="#">Financial Markets</a>	<a href="#">Financial Markets</a>
<a href="#">Currency &amp; Coins</a>	<a href="#">Fiscal Service</a>
<a href="#">Small Business</a>	<a href="#">Office of Economic Policy</a>
<a href="#">Accounting &amp; Budget</a>	<a href="#">Working Papers</a>
<a href="#">Technology</a>	<a href="#">Total Taxable Resources</a>
<b>PRESS ROOM</b>	<a href="#">Terrorism and Financial Intelligence</a>
<a href="#">Public Schedule</a>	<a href="#">Office of Foreign Assets Control</a>
	<a href="#">Executive Order 13324</a>
	<a href="#">National Money Laundering Strategy</a>
	<a href="#">Executive Office for Asset Forfeiture</a>

# Sitemaps for search engines

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- HTML
- Simple text
- XML

# Simple text sitemap

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## A comprehensive list of URLs

<http://www.firstgov.gov/index.shtml>

<http://www.firstgov.gov/About.shtml>

[http://www.firstgov.gov/Citizen/Services/Address\\_Changes.shtml](http://www.firstgov.gov/Citizen/Services/Address_Changes.shtml)

[http://www.firstgov.gov/Topics/Parents\\_Adoptive.shtml](http://www.firstgov.gov/Topics/Parents_Adoptive.shtml)

[http://www.firstgov.gov/Government/State\\_Local/Ag\\_Environment.shtml](http://www.firstgov.gov/Government/State_Local/Ag_Environment.shtml)

[http://www.firstgov.gov/Citizen/Topics/Environment\\_Agriculture/Agriculture.shtml](http://www.firstgov.gov/Citizen/Topics/Environment_Agriculture/Agriculture.shtml)

[http://www.firstgov.gov/Citizen/Facts/Facts\\_Agriculture.shtml](http://www.firstgov.gov/Citizen/Facts/Facts_Agriculture.shtml)

<http://www.firstgov.gov/Agencies/Federal/Executive/Agriculture.shtml>

# XML sitemap

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- A comprehensive list of URLs in XML
- Tagged with each URL's location, last modification, change frequency and priority

```
<?xml version="1.0" encoding="UTF-8"?>
<urlset xmlns="http://www.google.com/schemas/sitemap/0.84">
  <url>
    <loc>http://www.example.com/</loc>
    <lastmod>2005-01-01</lastmod>
    <changefreq>monthly</changefreq>
    <priority>0.8</priority>
  </url>
  <url>
    <loc>http://www.example.com/catalog?item=12&desc=vacation_hawaii</loc>
    <changefreq>weekly</changefreq>
  </url>
  <url>
    <loc>http://www.example.com/catalog?item=73&desc=vacation_new_zealand</loc>
    <lastmod>2004-12-23</lastmod>
    <changefreq>weekly</changefreq>
  </url>
  <url>
    <loc>http://www.example.com/catalog?item=74&desc=vacation_newfoundland</loc>
    <lastmod>2004-12-23T18:00:15+00:00</lastmod>
    <priority>0.3</priority>
  </url>
  <url>
    <loc>http://www.example.com/catalog?item=83&desc=vacation_usa</loc>
    <lastmod>2004-11-23</lastmod>
  </url>
</urlset>
```



# Introducing Google Webmaster Tools

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Free resources and tools to help you implement sitemaps and improve your sites' visibility in Google search results

## Google™ Webmaster Central

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Welcome to your one-stop shop for comprehensive info about how Google crawls and indexes websites. You can learn here how to ensure that your site is easily crawled and indexed and access tools that will enable you to diagnose crawling issues, study statistics on how your site is doing in our index, and tell us how you'd like your site to be crawled and indexed.



### [Site status wizard](#)

Find out whether your site is currently being indexed by Google.



### [Google's blog for webmasters](#)

The latest news and info on how Google crawls and indexes websites.



### [Webmaster tools \(including Sitemaps\)](#)

Statistics, diagnostics and management of Google's crawling and indexing of your website, including Sitemap submission and reporting.



### [Google's discussion group for webmasters](#)

Talk with your fellow webmasters and share your feedback with us.



### [Submit your content to Google](#)

Learn about submitting content for Google properties such as Google Base and Google Book Search.



### [Webmaster help center](#)

See answers to frequently asked questions about crawling, indexing, ranking and other webmaster issues.

Learn more at: <http://www.google.com/sitemapsgov>

# Implementing the Sitemap protocol

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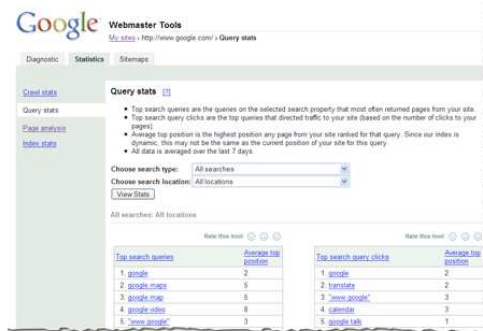
# Step 1: Login to Webmaster Tools with your Google Account



Google's [webmaster tools](#) provide you with a free and easy way to make your site more Google-friendly. Using our tools, you can:

**Get Google's view of your website, and diagnose potential problems.**  
See how Google crawls and indexes your site and learn about specific problems we're having accessing it.

**See how your site is performing.**  
Learn which queries drive traffic to your site, and see exactly how users arrive there.



**Share info with us to help us crawl your site better.**  
Tell us about your pages: which ones are most important to you and how often they change. You can also let us know how you would like the URLs we index to appear.

**Get started today -- it's free!**  
Simply log in with your Google Account and [add your site URL](#) to get started. It's an easy and free way to have a more interactive experience with Google.

Sign in to Google Webmaster Tools with your Google Account

Email:

Password:

Remember me on this computer.

[I cannot access my account](#)

← Login

Not using Gmail or other Google Account services?  
[Create a Google Account](#)

- Learn more about Google webmaster tools:
- [About Google webmaster tools](#)
  - [Google webmaster central](#)
  - [Webmaster help center](#)
  - [Google webmaster discussion group](#)



# Step 2: Add a Site to verify ownership

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Google webmaster tools are an easy way for you to submit all your URLs to the Google index and get detailed reports about the visibility of your pages on Google. To get started, simply add the URL of your site. You'll start to see information about your site right away.

**Add Site:**    
*Example: <http://www.google.com/> [\[?\]](#)*

[Tools](#)

**Read more about Google webmaster tools:**

[Learn more about the Google webmaster tools program](#)

[Learn more about Google Mobile Sitemaps](#)



# Step 3: Verify your site

Google Webmaster Tools  
mygovsite@gmail.com | My Account | Help | Sign out  
My sites > http://mygovsite.googlepages.com/ > Summary

Diagnostic | Statistics | Sitemaps

Summary

**Crawl errors**  
Web crawl  
Mobile Web

**Tools**  
[robots.txt analysis](#)  
Manage site verification  
Crawl rate  
Preferred domain  
Enhanced Image Search

**Summary** Rate this tool: ⓪ ⓪ ⓪

✓ Your site has been added to your account. Verify your ownership to view detailed statistics and errors for it.

⚠ No pages from your site are currently included in Google's index. Indexing can take time. You may find it helpful to review our [information for webmasters](#) and webmaster guidelines. [?]

⚠ We may not know about all the pages of your site. [Submit a Sitemap](#) to tell us more about your site.

» Next Step  
[Verify your site](#). By verifying your site you can access comprehensive statistics and crawl errors about the pages in your site

Verification status



Verification status: NOT VERIFIED

Once you verify that you're the site owner, we can provide you with comprehensive statistics and error information about the pages in your site. If you're unable to verify, you can still use the webmaster tools, submit Sitemaps, and see detailed information about those Sitemaps as well as basic information about your site. [?]

We offer two methods of verification. You can either upload an HTML file with a name we specify, or you can add a META tag to your site's index file. Choose your preferred method below. [?]

Two verification options



Choose verification method...  
Choose verification method...  
Add a META tag  
Upload an HTML file



## Step 4: Add a sitemap

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- A. Create a sitemap with Google's Sitemap Generator or any third-party tool
- Use any available 3<sup>rd</sup> party tool ([http://code.google.com/sm\\_thirdparty.html](http://code.google.com/sm_thirdparty.html))
  - For custom, dynamic environments, you may need to rely on internal scripts to generate a list of urls

Google Webmaster Tools  
mygovsite@gmail.com | [My Account](#) | [Help](#) | [Sign out](#)

My sites

Add Site:

Example: <http://www.google.com/> [\[?\]](#)

Site	Sitemaps	Site Verified?
<a href="#">Manage http://mygovsite.googlepages.com/</a>	<a href="#">Sitemap</a> <a href="#">Add a Sitemap</a>	<a href="#">Site Verified?</a> <a href="#">Verify</a>

Delete Selected | [Download this table](#)

Sites 1 to 1 of 1

↑  
Add a Sitemap



## Step 4: Add a sitemap

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- A. Create a sitemap with Google's Sitemap Generator or any third-party tool

Which sitemap is best for your site?

	Simple Text	XML
pros	+ Easy to create + Acceptable format	+ Provides detailed information for smarter, efficient crawling + Tags are optional
cons	- No gains in efficiency	- Entails additional steps



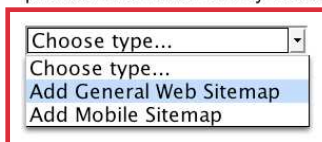
# Step 4: Add a sitemap

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- B. Upload the sitemap file to your site
- C. Add the sitemap URL to your account
  - Add at the highest level in your website directory structure that you want crawled
  - See the status of the sites and sitemaps in your account

## Add Sitemap

You can add a Sitemap to your account to provide us with additional information about your site. We will process your Sitemap and provide information on any errors in the Sitemaps tab. [\[?\]](#)



A screenshot of a dropdown menu with a red border. The menu is open, showing four options: "Choose type...", "Choose type...", "Add General Web Sitemap", and "Add Mobile Sitemap". The "Add General Web Sitemap" option is highlighted in blue.

*Lists pages that are meant to be accessed by desktop browsers.*

1. I've created a Sitemap in a supported format. [\[?\]](#)
2. I've uploaded my Sitemap to the highest-level directory to which I have access.

Enter sitemap URL →



A screenshot of a text input field with a red border. The field contains the text "3. My Sitemap URL is:" followed by a blank space. Below the field, there is an example URL: "Example: <http://mygovsite.googlepages.com/sitemap.xml>".

Add Web Sitemap





# Features: Crawl Errors Show problematic pages

**Web, Mobile** →

**URLs with errors** →

**Crawl error summary** ←

**Error detail, Date Stamp** ←

**Google Webmaster Tools**  
 My sites > http://www.google.com/ > Web crawl

Diagnostic | Statistics | Sitemaps

Summary

**Crawl errors**

Web crawl

Mobile Web

Tools

robots.txt analysis

Manage site verification

Preferred domain

**Web crawl** [?]

This page lists URLs from your site that Googlebot had trouble crawling. Googlebot found these pages either in your Sitemap or by following links from other pages during a discovery crawl. Choose a category of errors to view:

**HTTP errors (31)** | [Not found \(67360\)](#) | [URLs not followed \(791\)](#) | [URLs restricted by robots.txt \(1600742\)](#) | [URLs timed out \(28\)](#) | [Unreachable URLs \(796\)](#)

Choose a date range:

Start date:  End date:

Rate this tool: ☹️ 😐 😊

Errors 1 to 31 of about 31

URL	Detail	Last Calculated
<a href="http://www.google.com/accounts/ClientLogin">http://www.google.com/accounts/ClientLogin</a>	403 (Forbidden) [?]	Aug 14, 2006
<a href="http://www.google.com/chart">http://www.google.com/chart</a>	400 (Bad request) [?]	Aug 8, 2006
<a href="http://www.google.com/group/misc.health.diabetes">http://www.google.com/group/misc.health.diabetes</a>	403 (Forbidden) [?]	Aug 2, 2006
<a href="http://www.google.com/grhp?hl=en&amp;tab=wg">http://www.google.com/grhp?hl=en&amp;tab=wg</a>	403 (Forbidden) [?]	Aug 12, 2006
<a href="http://www.google.com/interstitial?url=">http://www.google.com/interstitial?url=</a>	403 (Forbidden) [?]	Aug 5, 2006
<a href="http://www.google.com/maplinedraw?width=">http://www.google.com/maplinedraw?width=</a>	400 (Bad request) [?]	Aug 2, 2006



# Features: Query Stats identifies popular queries

- See your **top 20** search queries and search query clicks
- **Top position** shows you where your pages were listed per search query
- Easily export a report with **CSV** download feature

Search queries = impressions in search results

Google Webmaster Tools  
My sites > http://www.google.com/ > Query stats

Diagnostic Statistics Sitemaps

Query stats [?]

- Top search queries are the queries on the selected search property that most often returned pages from your site.
- Top search query clicks are the top queries that directed traffic to your site (based on the number of clicks to your pages).
- Average top position is the highest position any page from your site ranked for that query. Since our index is dynamic, this may not be the same as the current position of your site for this query.

All data is averaged over the last three weeks.

Choose search type: Web Search

Choose search location: (France) google.fr

View Stats

Web Search: (France) google.fr

Top search queries	Average top position
1. google	3
2. sexyloo	10
3. jacquieetmichel	8
4. chat nrj	9
5. google map	7
6. jacquie et michel	8
7. google maps	5
8. france examen	10

Top search query clicks	Average top position
1. google	3
2. translate	4
3. google arabe	2
4. google calendar	2
5. google translate	2
6. google talk	3
7. google analytics	2
8. google usa	2

Position per query in results

Query clicks = traffic



# Overview of features: More information and statistics

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- Crawl Errors → shows you which pages were problematic
- Query Stats → shows queries that drive traffic to your site
- Diagnostic → tab reports help you troubleshoot crawl errors
- Robots.txt → helps to improve your coverage
- Page Analysis → shows how Google sees your pages
- Index Stats → shows how your pages are indexed



# Some questions to consider

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- Publishing system:
  - What database applications (Oracle, SQL Server, flat files, etc) do you operate?
- System management:
  - Can you download and install third-party tools on your web server?
- URL structure:
  - Can you list and explain a few combinations of how your site URL is constructed?

# PlainLanguage.gov success story

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- Plain Language Information and Action Network (PLAIN), a federal inter-agency volunteer working group that encourages clarity in government communication to the public through PlainLanguage.gov
- Before-and-after examples of government documents served dynamically, thus uncrawlable



# PlainLanguage.gov success story

Google Web Images Video News Maps more »  
over-the-counter drug label Search Advanced Search Preferences

**Web**

[The New Over-the-Counter Medicine Label: Take a Look](#)  
All nonprescription, **over-the-counter** (OTC) medicine **labels** have detailed usage and ... The new **Drug Facts labeling** requirements do not apply to dietary ...  
[www.fda.gov/cder/consumerinfo/OTClabel.htm](http://www.fda.gov/cder/consumerinfo/OTClabel.htm) - 34k - [Cached](#) - [Similar pages](#)

[Over-the-Counter Medicines: What's Right for You?](#)  
Read the **label!** **Drug labels** change as new information becomes available. That's why it's important to read ... Consumer Education: **Over-the-Counter** Medicine ...  
[www.fda.gov/cder/consumerinfo/WhatsRightForYou.htm](http://www.fda.gov/cder/consumerinfo/WhatsRightForYou.htm) - 40k - [Cached](#) - [Similar pages](#)  
[ [More results from www.fda.gov](#) ]

[Understand Over-the-Counter Drug Labels](#)  
Reading the product **label** is the most important part of taking care of yourself or your family when using **over-the-counter** (OTC) medicines (those that are ...  
[www.webmd.com/content/article/61/67580.htm](http://www.webmd.com/content/article/61/67580.htm) - 40k - [Cached](#) - [Similar pages](#)

**Plain Language: Over-the-counter drug label DocID: 6**  
Examples>[Over-the-counter drug label](#). [Over-the-counter drug label](#) Food and Drug Administration, No-Gobbledygook Award Winner. No None Version available ...  
[www.plainlanguage.gov/test/Examples/indexExample.cfm?record=6&search=BA](http://www.plainlanguage.gov/test/Examples/indexExample.cfm?record=6&search=BA) - 13k - [Cached](#) - [Similar pages](#)



Plain Language.gov  
Improving Communication from the Federal Government to the Public

Home What is PL? Why PL? Using PL

[Examples](#)>Over-the-counter drug label

**Over-the-counter drug label**  
*Food and Drug Administration*

---

[Over-the-counter drug label](#) (pdf)

- Web manager successfully implemented sitemap in ~8 hours, using available resources and through trial and error
- As new examples are added to the database, the sitemap is regenerated and submitted

# OSTI success story

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- Department of Energy agency that “makes R&D findings available and useful, so that science and technological creativity can advance”
- Web manager submitted sitemaps for Energy Citations and Information Bridge services, opening 2.3M bibliographic records and full-text documents to crawling
- Sitemap standard assures web search engines have “a complete picture” of information in OSTI services



# OSTI success story

Google [Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

nuclear physics giant resonances osti   [Advanced Search](#) [Preferences](#)

**Web**

[Energy Citations Database \(ECD\) - Energy and Energy-Related ...](#)  
 Subject, N68351 --Physics (Nuclear, Experimental)--Nuclear Properties ... The **giant dipole resonance** is not appreciably excited for any of the targets.(AIP) ...  
[www.osti.gov/energycitations/product.biblio.jsp?osti\\_id=4013309](http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=4013309) - 15k -  
[Cached](#) - [Similar pages](#)

[Energy Citations Database \(ECD\) - Energy and Energy-Related ...](#)  
 Nuclear Physics Lab. Sponsoring Org, DOE/ER. Subject, 73 **NUCLEAR PHYSICS** AND ...  
 tapes: **giant resonances**; nucleus-nucleus reactions; **nuclear** astrophysics; ...  
[www.osti.gov/energycitations/product.biblio.jsp?osti\\_id=6686188](http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=6686188) - 13k -  
[Cached](#) - [Similar pages](#)

[PDF](#) [Yields of Radionuclides Created by Photonuclear Reactions on Be, C ...](#)  
 File Format: PDF/Adobe Acrobat - [View as HTML](#)  
 Division of **Nuclear Physics**. Prepared by the OAK RIDGE NATIONAL LABORATORY ...  
 where the (iy,n) values are averages over the **giant resonances** of ...  
[www.ornl.gov/~webworks/cprpr/y2002/rpt/112299.pdf](http://www.ornl.gov/~webworks/cprpr/y2002/rpt/112299.pdf) - [Similar pages](#)



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1948 - Present

Energy Citations Database

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Availability information may be found in the Availability, Publisher, Research Organization, Resource Relation and/or Author (affiliation information) fields and/or via the "Full-text Availability" link. For a journal article, please see the Resource Relation field.

**Title** Giant resonances observed in the scattering of 96- and 115-MeV alpha particles

**Creator/Author** [Youngblood, D.H.](#) ; [Moss, J.M.](#) ; [Rozsa, C.M.](#) ; [Bronson, J.D.](#) ; [Bacher, A.D.](#) ; [Brown, D.R.](#)

**Publication Date** 1976 Mar 01

**OSTI Identifier** OSTI ID: 4013309

**Other Number(s)** CODEN: PRVCA

**Resource Type** Journal Article

**Resource Relation** Phys. Rev., C, v. 13, no. 3, pp. 994-1008

**Research Org** Cyclotron Institute and Physics Department, Texas A and M University, College Station, Texas 77843

**Subject** N68351 --Physics (Nuclear, Experimental)--Nuclear Properties & Reactions, 6 <= A <= 19--Nuclear Reactions & Scattering;N68451 --Physics (Nuclear, Experimental)--Nuclear Properties & Reactions, 20 <= A <= 38--Nuclear Reactions & Scattering;N68551 --Physics (Nuclear, Experimental)--Nuclear Properties & Reactions, 39 <= A <= 58--Nuclear Reactions & Scattering;N68651 --Physics (Nuclear, Experimental)--Nuclear Properties & Reactions, 59 <= A <= 89--Nuclear Reactions & Scattering;N68751 --Physics (Nuclear, Experimental)--Nuclear Properties & Reactions, 90 <= A <=

- Benefits include better representation in search results and reduced load on servers (by limiting duplicate crawling)
- First implementation completed in 16 staff hours -- can now be easily replicated across web search engines



# NCES success story

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- Department of Education agency that provides statistical information about districts, schools, and other educational facilities
- Using freely available tools, web manager submitted sitemaps to open five dynamic databases to crawling, adding 180K URLs



# NCES success story

Google [Web](#) [Images](#) [Video](#) [News](#) [Maps](#) [more »](#)

gardiner elem school district  [Advanced Search](#) [Preferences](#)

**Web**

**Search for Public School Districts - District Detail for Gardiner Elem**  
 Use the Search For Public **S**chool Districts locator to retrieve information on all US public **s**chool districts. This data is collected annually directly from ...  
[nces.ed.gov/ccd/districtsearch/district\\_detail.asp?ID2=3011820](http://nces.ed.gov/ccd/districtsearch/district_detail.asp?ID2=3011820) - 41k -  
[Cached](#) - [Similar pages](#)

**Montana School, School System and School District Information - MT**  
**GARDINER ELEM GARDINER, MT CITY School District** and Schools Information.  
 Elementary Schools, Middle Schools and High Schools in **GARDINER, MT** ...  
[www.schoolmatch.com/ppsi/schools/txtschmt.cfm](http://www.schoolmatch.com/ppsi/schools/txtschmt.cfm) - 94k - Nov 29, 2006 -  
[Cached](#) - [Similar pages](#)



Institute of Education Sciences U.S. Department of Education

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**Search for Public School Districts** **CCD** Common Core of Data

[Modify Search](#) [Data Notes/Grant IDs](#) [Help](#)

**District Information**

<b>District Name:</b> Gardiner Elem <a href="#">schools for this district</a>	<b>County:</b> Park	<b>County ID:</b> 30067
<b>Mailing Address:</b> 510 Stone Street Gardiner, MT 59030	<b>Physical Address:</b> 510 Stone Street Gardiner, MT 59030	<b>Phone:</b> (406) 848-7563
<b>NCES District ID:</b> 3011820	<b>State District ID:</b> 0614	

**District Details** [Show Less](#)

**Characteristics**

**Grade Span:** (grades PK - 8)  
 PK|KG|1|2|3|4|5|6|7|8

<b>Total Schools:</b>	2	<b>Type:</b>	Regular School District
<b>Total Students:</b>	157	<b>Locale/Code:</b>	Rural, outside CBSA / 7
<b>Classroom Teachers (FTE):</b>	10.7	<b>Status:</b>	No Boundary Change
<b>Student/Teacher Ratio:</b>	14.7	<b>Metro Status:</b>	Non MSA - Does not serve an MSA
<b>Summer Migrant Students:</b>	N/A	<b>CSA/CBSA:</b>	00000
<b>ELL (formerly LEP) Students:</b>	0	<b>Supervisory Union #:</b>	000
<b>Students with IEPs:</b>	20		

- Now surfacing tens of thousands of potential web search hits with links to NCES services
- Helping to ensure citizen users gain access to the latest data from the original source

# Federal Sitemaps wiki

An initiative to help federal agencies make their websites more accessible to search engine users

## FederalSitemaps

[WikiHomePage](#) | [RecentChanges](#) | [Page Index](#)



[Login](#) (create account)

### Federal Sitemaps (3CFL)

[Upcoming](#) and [Past Events](#) (3E6G)

- The [Sitemap protocol](#) is an open, XML-based standard for managing search engine crawling. The protocol provides website owners a means of communicating to search engines the location, priority, change frequency, and last modification date of all pages on a website or web-accessible database, which can ensure complete and efficient crawling of the site's contents. (3CFM)
- The Sitemap protocol was introduced by Google in June 2005 under a Creative Commons License and was adopted in November 2006 as an industry standard by [Google](#), Microsoft and Yahoo. (3CFN)
  - [SearchEngineWatch - Search Engines Unite On Unified Sitemaps System](#) (3CQI)

#### Your Visited Pages

[FederalSitemaps](#)

[View Backlinks](#)

Search

<http://colab.cim3.net/cgi-bin/wiki.pl?FederalSitemaps>  
Or <http://tinyurl.com/3byhy7>

# Relevant legislation and OMB policy

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- The Sitemap protocol supports the **E-Government Act of 2002** requirements to:
  - “Organize and categorize information intended for public access and ensure it is searchable across agencies...[using] sophisticated Internet search functions (including their crawl and index mechanisms)...”
  - “...publish your information directly to the Internet...expos[ing] information to freely available and other search functions [that] adequately [organize] and [categorize] your information.”
  - “...[When] disseminating significant information dissemination products, advance preparation, such as using formal information models, may be necessary to ensure effective interchange or dissemination. This procedure is needed when freely available and other search functions do not adequately organize and categorize your information.”
- The Sitemap protocol also supports the **Federal Enterprise Architecture's Data Reference Model 2.0** requirements to:
  - “Identify how information and data are created, maintained, accessed, and used...[and] Define data and describe relationships among data elements used in the agency’s information systems.”

# Next steps for web managers

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- Audit your agency's sites to identify uncrawlable elements
  - See list of NIH sites identified as uncrawlable or potentially uncrawlable:  
<http://spreadsheets.google.com/pub?key=pUb62ZKHnzgqDy5RvGPycQg>
- Sign up at [www.google.com/sitemapsgov](http://www.google.com/sitemapsgov):
  - Verify your sites' ownership
  - Produce and upload sitemaps
- Get answers:
  - At Webmaster Central: [www.google.com/webmasters](http://www.google.com/webmasters)
  - Or directly: [sitemap-partners@google.com](mailto:sitemap-partners@google.com)
- Track your progress

# Making your agency's sites more accessible

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- Implementing sitemaps can **enhance**, but **does not replace**, a web search engine's crawling
- It does not guarantee inclusion, but helps to provide users **more information** and **fresher results**

- The Sitemap protocol is an **open, industry standard**
- Ensures **all** your agency's public information and services are discoverable by **all** potential users
- Also **accelerates** the inclusion of new information in search results

- Makes web search engine crawling **more efficient**, reducing demands on servers
- **Most sitemaping tools are free** and can be easy to implement
- Can be readily **replicated** across web search engines