



Driving Innovation with Open Data

Chris Musialek in place for Jeanne Holm

Data.gov

February 9, 2012

Creating a Data Ecosystem

1. Gather data

- from many places and give it freely to developers, scientists, and citizens

2. Connect the community

- in finding solutions to allow collaboration through social media, events, platforms

3. Provide an infrastructure

- built on standards

4. Encourage technology developers

- to create apps, maps, and visualizations of data that empower people's choices

5. Gather more data

- and connect more people



“A Strategy for American Innovation” published September 2009



- Provides instant access to over 400,000 datasets in easy to use formats
- Contributions from UN, World Bank, and 185 agencies
- Encourage development of innovative applications
- Drive innovation and knowledge use across the globe

Easy to Find Data

2009 ACRES AFS AQS ARRA Air Force Air Major Air Minor Army Bankruptcy Brownfields CA
 CAMDBS CERCLIS California Case Chemical Chemical Pollution
 Chemical Release Chemicals Coast Guard Current Data DOC DUNS
 Defence Defense Department of Commerce DoD EPA EPCRA EPCRA 313 FRS
 FRS Data Final Rule Form A Form R HCRIS Hazardous ICIS IP LQG
 Labor Labor Organization Lake Levels Marine Corps Marines NAICS NCDB NCES NEI NEPA
 NLRB NPDES NPL National Science Foundation Navy PBT PCS RCRA RCRAINFO RFS RMP
 Report Reservoir Levels Right to Know SDWIS SIC SQG SSTS STATE Superfund
 TRI TRI 2009 Data TRI Data TRI Preliminary Data
 TRI Report TRI Reporting TRI State Data TRIS TSD TVA
 Lake Levels TVA Reservoir Levels Toxic Toxic Release Toxic Release
 Inventory Toxics Toxics Release Toxics Release
 Inventory Transporter U.S. Fish and Wildlife Service U.S. Patent & Trademark Office U.S. Patent
 and Trademark Office US Patent and Trademark Office USAF USCG USMC USN USPTO Union United
 States United States Patent and Trademark Office XML affiliation type aircraft bibliographic data bios
 children community community right to know comparison conditional
 facilities creditors critical habitat data.gov education emergency services energy environment
 environmentalinterest type examine facilities facility facility registry identifier facility site
 federal data download federal datasets file grant hc hoaps health hhs home health agencies
 hospital compare hospital list hospital type industries industry innovation intellectual

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DATA.GOV
 EMPOWERING PEOPLE

HOME MY DATA.GOV TOOLS COMMUNITY METRICS OPEN DATA SITES GALLERY WHAT'S NEW

HARVARD BUSINESS SCHOOL CASE STUDY
 ON DATA.GOV
 Harvard Business School created a case study of the Data.gov evolution to help
 drive learning in how to open up government data and...
[View More](#)

DRG Payments
 A breakdown of California DRG Payments,
 graphed against their respective condition.

\$39,147,222
 Total salary budget for the White House

GDP by Country
 World GDP listed by country and continent.

**Renal Dialysis Facility
 Medicare Cost Report - 2008**
 A collection of Renal Dialysis Facility Medicare
 cost report data from the CMS Form 255-04.

Search

Search & Browse Datasets and Views

Name	Popularity	Type
1. Survey of Patients' Hospital Experiences (HCAHPS) hospital compare, hoaps, quality, ratings, ... A list of hospital ratings for the Hospital Consumer Assessment of Healthcare Providers and Systems	22,982 views	
2. Hospital Outcome Of Care Measures hospital compare, outcome of care, ooc, quality, ... A list of hospitals and the corresponding Outcome of Care rates for certain conditions. *Outcome of Care	11,399 views	
3. Nursing Home Compare - Survey Dates nursing home, nhc, survey dates, ... A list that provides the three most recent health and fire safety inspection dates for each nursing home.	7,849 views	
4. Hospital General Information hospital compare, hospital list, ... A list of all Hospitals that have been registered with Medicare. The list includes addresses, phone numbers,	6,709 views	
5. Hospital Medicare Payment And Volume Measures hospital compare, mqv, hc, quality, ratings, ... A database displaying the average payment by Medicare for each medical condition or surgical procedure	5,783 views	
6. Nursing Home Compare - Survey Deficiency nursing home, nhc, safety, health, fire safety, ... A list that provides the survey deficiencies found during the nursing home annual inspection. Categories	5,300 views	
7. Home Health Care Facilities hhc, facilities, quality, ratings, comparison, ... A list of all Home Health Facilities that have been inspected with Medicare. The list includes addresses,	4,760 views	

View Types
 Datasets
 Filtered Views
 Charts
 Maps
 Calendars
 Forms

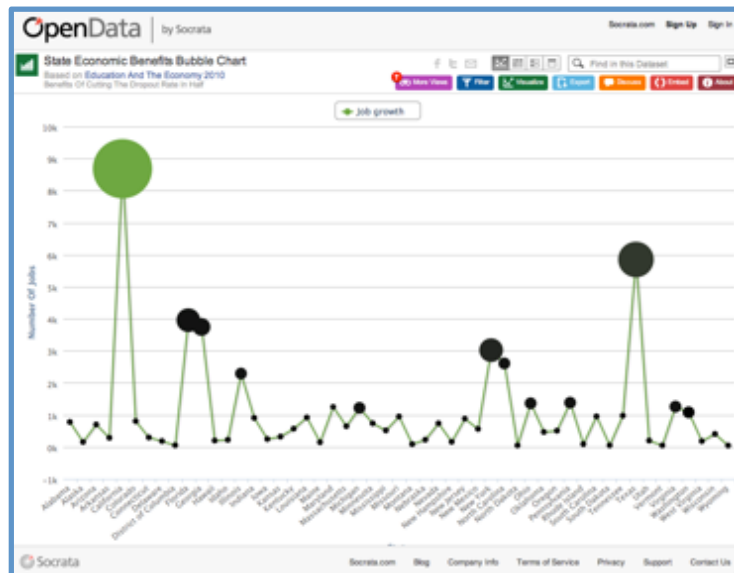
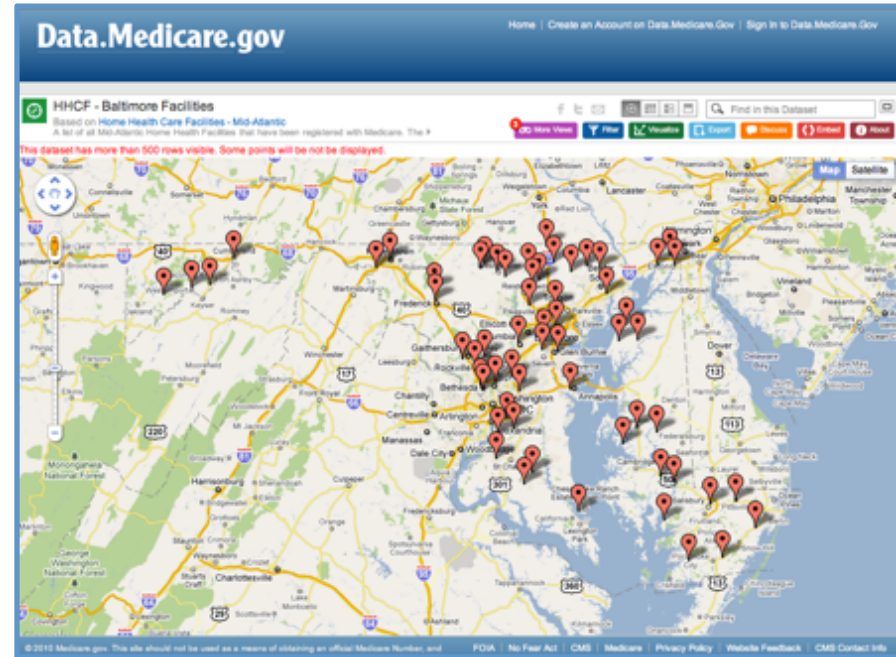
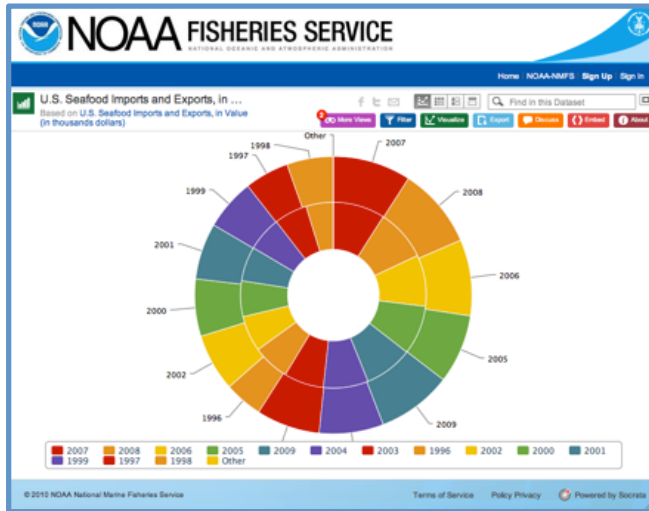
Categories
 Arts, Recreation, and Travel
 Agriculture
 Banking, Finance, and Insurance
 Births, Deaths, Marriages, and Divorces
 Business
 Business Enterprise
 Census

Medical Procedure Costs

View Types

- Datasets
- Filtered Views
- Charts
- Maps
- Calendars
- Forms

The Power of Visualizations



Data.Medicare.gov
Hospital Compare

Hospital Name	Address 1	City	Phone Number	Percent of patients who reported th	Percent of patients who rep
1 VIRGINIA MASON MEDICAL CENTER	1100 NINTH AVENUE (PO BOX 9	SEATTLE	2062236600		
2 SWEDISH MEDICAL CENTER/CHERRY H	500 17TH AVENUE	SEATTLE	2063202000	3%	
3 GROUP HEALTH CENTRAL HOSPITAL	201 - 18TH AVENUE EAST	SEATTLE	2063263000	4%	
4 NORTHWEST HOSPITAL	1550 NORTH 115TH STREET	SEATTLE	2063640500	5%	
5 SWEDISH MEDICAL CENTER	747 BROADWAY	SEATTLE	2063868000	6%	
6 UNIVERSITY OF WASHINGTON MEDICAL	1959 NE PACIFIC ST	SEATTLE	2065983300	6%	
7 HARBORVIEW MEDICAL CENTER	325 9TH AVENUE	SEATTLE	2067313000	7%	



Powered Through Advanced Technologies

- Provides developers the tools and raw data formats to develop new capabilities
- Partnership with W3C (eGov Interest Group) and with RPI for research in semantic web
- Connected to other open data efforts across the world
- Data hosted in the cloud
- Open source platform
- Builds on ontologies developed in specific areas



Open Communities



Community	
Restore the Gulf	✓
Open Data	✓
Semantic Web	✓
Health	✓
Law	✓
Energy	✓
Education	
Ocean	
Research and Development	
Public Safety	
Human rights	
<i>+ many more...</i>	

An Official Web Site of the United States Government | Tuesday, January 18, 2011 | Text: A- A+ A | Share

DATA.GOV / HEALTH | Login | Sign Up

WELCOME TO THE **HEALTH DATA COMMUNITY**
 You've found a public resource designed to bring together high-value datasets, tools, and applications using data about health and health care to support your need or better knowledge and to help you to solve problems. These datasets and tools have been gathered from agencies across the Federal government with the goal of improving health for all Americans. Check back frequently because the site will be updated as more datasets and tools become available.
[More Information](#)

HEALTH INDICATORS WAREHOUSE
[VIEW MORE](#)

Home | **Devel** | Data/Tools | Apps Expo | Other Data Sites | Blogs | Forums

Search This Community... [SEARCH](#)

Data.gov » All Communities

Challenges

Pellentesque libero mauris, mollis at sollicitudin ut, mattis in lorem. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Sed lobortis congue elementum. Pellentesque elit tortor, feugiat eu iaculis et, porttitor at turpis! Vivamus vehicula nibh vel massa elementum blandit.

Forums

What's New

Learn about our newest high-value datasets.

- [ClinicalTrials.gov: linking patients to medical research](#)
- [Genetics home reference](#)
- [MedlinePlus Health Topic Web Service](#)
- [PubChem](#)

Blogs

Recent Blog Post

Test bloh 17jan 15:16 V4

Posted on: 1/17/2011
 Test bloh 17jan 15:16 V4

*Champion: Todd Park
 Chief Technology Officer
 US Dept. of Health and
 Human Services*

Apps

Forums

Blogs

Challenges

Publicizing Data to Innovators

- Challenges and code-a-thons
(health2challenge.org)
- Many innovator “meetups” and conferences
- Annual health data-paloozas
- Over 139 applications
- 50 new businesses
- Thousands of lives improved each day



2011 Health 2.0 DEVELOPER CHALLENGE **Imagine**

[Skip to Main Content](#)

[About](#) [Online Challenges](#) [Live Challenges](#) [People](#) [Resources](#) [Sponsor](#) [Partners](#) [Gallery](#) [In The News](#)

ONLINE CHALLENGES

Healthcare has big challenges. And technology might not solve them all. But we believe in progress one app at a time. Have a technical problem that needs working out? An app you wish existed? Data that's sitting on the shelves getting dusty that could be made more useful? You will be amazed by what's possible. Read the [FAQs here](#).

[Submit a challenge](#) | [Sponsor a challenge](#)

LIVE CHALLENGES

Want to connect, collaborate and build products in real-time? That's what the [Code-a-thons](#) are for! Whether you're a developer, a designer, a researcher, a physician or a patient – you've got an important viewpoint that we'd love to share and be a part of the project. **Check back soon to learn more about our 2011 schedule.**

Want to sponsor a Code-a-thon? [Learn more](#)

Members

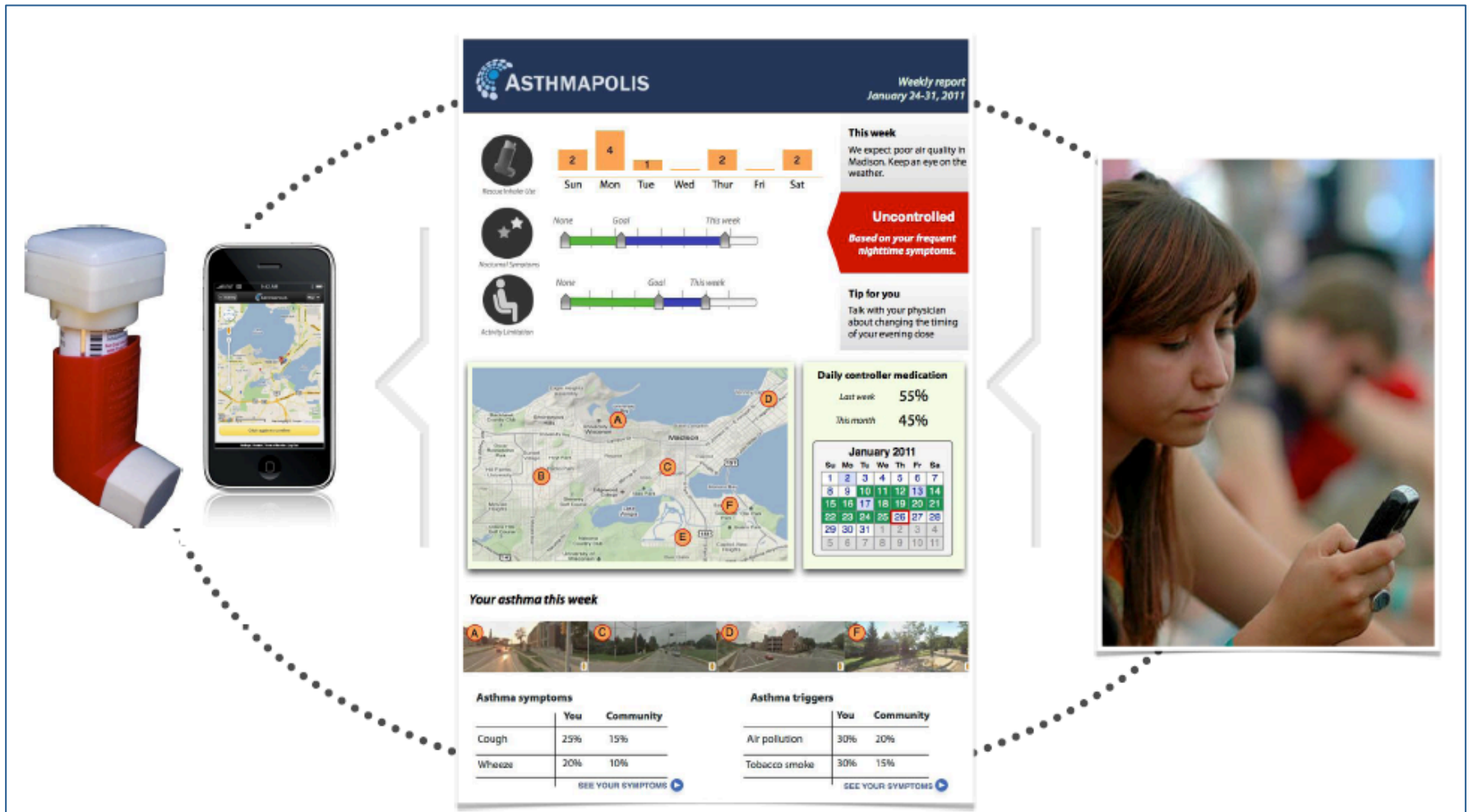
 hbbkag

 George

 Amanda



Creating Apps That Improve Lives: Asthmapolis



ASTHMAPOLIS
Weekly report
January 24-31, 2011

This week
We expect poor air quality in Madison. Keep an eye on the weather.

Uncontrolled
Based on your frequent nighttime symptoms.

Tip for you
Talk with your physician about changing the timing of your evening dose.

Daily controller medication
Last week: 55%
This month: 45%

January 2011

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

Your asthma this week

Asthma symptoms

	You	Community
Cough	25%	15%
Wheeze	20%	10%

[SEE YOUR SYMPTOMS](#)

Asthma triggers

	You	Community
Air pollution	30%	20%
Tobacco smoke	30%	15%

[SEE YOUR SYMPTOMS](#)



Think Big, Start Small, Innovate

Data.gov Quick Facts	May 2009	October 2011
Total datasets available	47	>400,000
Hits to Data.gov	0	>200 million
Apps and mash-ups by citizens and government	0	372 + 1113
RDF triples for semantic applications	0	6.7 billion
Dataset downloads	0	>2.0 million
Nations establishing open data sites	0	28
States offering open data sites	0	31
Cities in North America with open data sites	0	13
Open data contacts in Federal agencies	24	396
Agencies and subagencies participating	7	185
Communities	0	7
Community challenges	0	23

Energy Drives Innovation

- Energy.Data.gov connects innovators, industry, academia, and government at federal, state, and local levels



An Official Web Site of the United States Government Thursday, November 3, 2011 | Text: A^AA | Share

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WELCOME TO ENERGY.DATA.GOV
where data and insight are combined to facilitate public discussion and awareness of our Nation's energy activities. Whether you are interested in alternative fuels, managing buildings to be more energy efficient, or trying to manage energy in your own home, we have something for you. Look at the data, use the apps, join the conversation.
[Make a Suggestion](#)

SPECIAL FEATURES
CODE FOR LIVABILITY
[VIEW MORE](#)

Home | **Data/Tools** | Apps | Maps | Challenges | Resources | Blogs | Forums | Search This Community... SEARCH

Data.gov » All Communities

Welcome



Energy.data.gov is a new open government initiative to increase awareness of and deepen insights into our Nation's energy performance. Energy.data.gov brings together high-value datasets, tools, and applications to shed new light on energy use. These free datasets and tools have been gathered from agencies across the Federal government with the goal of empowering all Americans to understand energy

Energy Data Features



An early focus of Energy.data.gov is on energy use in homes and buildings and opportunities for energy efficiency, especially among Federal government buildings. For the first time ever, Energy.data.gov now features detailed data on historical energy consumption and costs of all Federal agencies back to 1975 by agency, end-use sector, and energy type.

Challenges



To maximize opportunities for education and entrepreneurship across a diverse set of energy subjects, Energy.data.gov has challenges, prizes, and competitions that relate to energy data in meaningful and engaging ways. Compete in a challenge, get to know winners of previous challenges, ask questions, and share your great ideas!

- Energy.Data.gov connects works with challenges across the nation to integrate federal data and bring government personnel to code-a-thons

Challenges Spark Ideas

CHALLENGES

Want to get involved in helping to solve an energy problem that you see in your home, community, or country? Join in on one of our challenges. Challenges range from brainstorming ideas to creating applications to proposing research. Not ready to jump in? Then come and see how others have responded and look at the winners of previous challenges.

Open Challenges



sustainability to the forefront of peoples' everyday lives. Join us on January 21-22, 2011 to make a difference!

Code for Livability

The Partnership for Sustainable Communities is hosting a code-a-thon to bring together citizens, developers, and government personnel to work on solutions that bring

sustainability to the forefront of peoples' everyday lives. Join us on January 21-22, 2011 to make a difference!



2011 ENERGY STAR National Building Competition: Battle of the Buildings

It's an energy savings battle as 245 buildings compete to see who can be the most efficient.

Resources:

- CBECS
- CEUS
- EnergyIQ
- Portfolio Manager
- NREL Renewable Energy Certificate and Green Power Markets



America's Home Energy Education Challenge

Participate in three great ways:

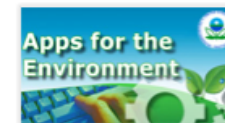
- Have your class or school join in the Home Energy Award by saving energy and win prizes for

your school!

- Feeling artistic? Design a conservation plan and poster.
- Shall we play a game? Compete in the Energy Fitness Award with online games, quizzes and activities to earn prizes for you and your school.

Resources:

- EnergySmart
- EnergySavers.gov



Apps for the Environment

EPA challenges you to find new ways to combine and deliver environmental data in a new app. In the Apps for the Environment challenge, you have free reign to make an app that uses EPA data, addresses one of Administrator Lisa Jackson's Seven Priorities, and is useful to communities or individuals. EPA encourages you to use other environmental, energy, and health data too. The winners will be honored at a recognition event in Washington, D.C. this fall and the winning apps will be publicized on EPA's website. EPA is counting on you to come up with exciting and useful new apps!



Build your own challenge for energy efficiency

You can use this platform and process to employ ENERGY STAR tools and resources in your energy improvement

efforts.



Rooftop Solar Challenge

Be part of a national effort to make clean solar electricity cost-competitive for your community.





Data Drives Decisions

- Apps transform data in understandable ways to help people make decisions

MOBILE APPS

These apps are available on your mobile device, some are available in only a single format and others in multiple formats. Each icon links to the appropriate format when available. A "mobile web" app is designed for optimum use over your mobile device through its built-in web browser.





Showing 1-4 of 5

<p>AIRNow</p>  <p>Provides real-time air quality information that you can use to protect your health when planning your day.</p> <p>Download iOS App Download Android App</p>	<p>Alternate Fuel Locator</p>  <p>Find fueling stations for your alternative fuel vehicle on-the-go with the U.S. Department of Energy's Alternative Fueling Station Locator.</p> <p>Access Mobile Web</p>	<p>Fuel Economy.gov</p>  <p>Calculate gas mileage (MPG), annual fuel costs, annual petroleum use, and the carbon footprint information for your car or truck.</p> <p>Access Mobile Web</p>	<p>Sustainable Facilities Tool</p>  <p>Identify and prioritize green building strategies to improve environmental and cost performance for small building projects.</p> <p>Download iOS App Download Android App Download BlackBerry App</p>
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1 2

MOBILE APPS

Showing 1-4 of 35

<p>Alternative Fueling Station Locator</p>  <p>Mapping application of alternative fueling stations across the U.S., including biodiesel, CNG, E85, hydrogen, LNG.</p>	<p>Bioenergy Knowledge Discovery Framework</p>  <p>Spatial planning application used to identify bioenergy resources and logistical constraints with project planning.</p>	<p>Biopower Mapping Application</p>  <p>Spatial planning application to analyze potential scenarios for developing biomass power or biofuel facilities.</p>	<p>Energy Index for Commercial Buildings</p>  <p>Benchmarking application for commercial buildings allowing users to compare their energy use to national average.</p>
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App Store > Business > Noblis, Inc.

SF Mobile

Description

Sustainable Facilities Mobile (SF Mobile) brings valuable sustainable building and workplace design guidance from the U.S. General Services Administration's (GSA) Sustainable Facilities Tool (http://www.sftool.gov) into your hands wherever you go. SF Mobile makes it easy for both government and private-sector prope...
...More

SF Mobile Support >

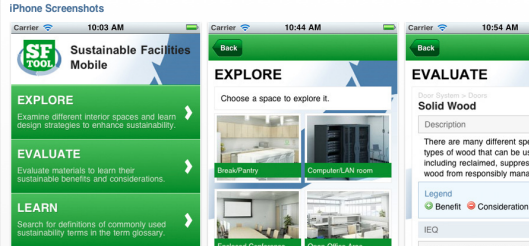
Free App

Category: Business
Released: May 24, 2011
Version: 1.0
Size: 14.9 MB
Language: English
Seller: Noblis, Inc.
© 2011 Noblis, Inc.

Rated 4+

Requirements: Compatible with iPhone, iPod touch, and iPad. Requires iOS 3.0 or later.

iPhone Screenshots



The Path Ahead

- Bring data up and out of government to the public ★
- Make data accessible and linked ★★★★★
- Provide simple ways to visualize the data
- Create communities to understand and apply data
- Connect and collaborate with small businesses, industry, and academia to drive innovation
- Develop open source open government data platform with India for global use and further community development
- Share with others to understand global issues

Be the change you want to see in the world

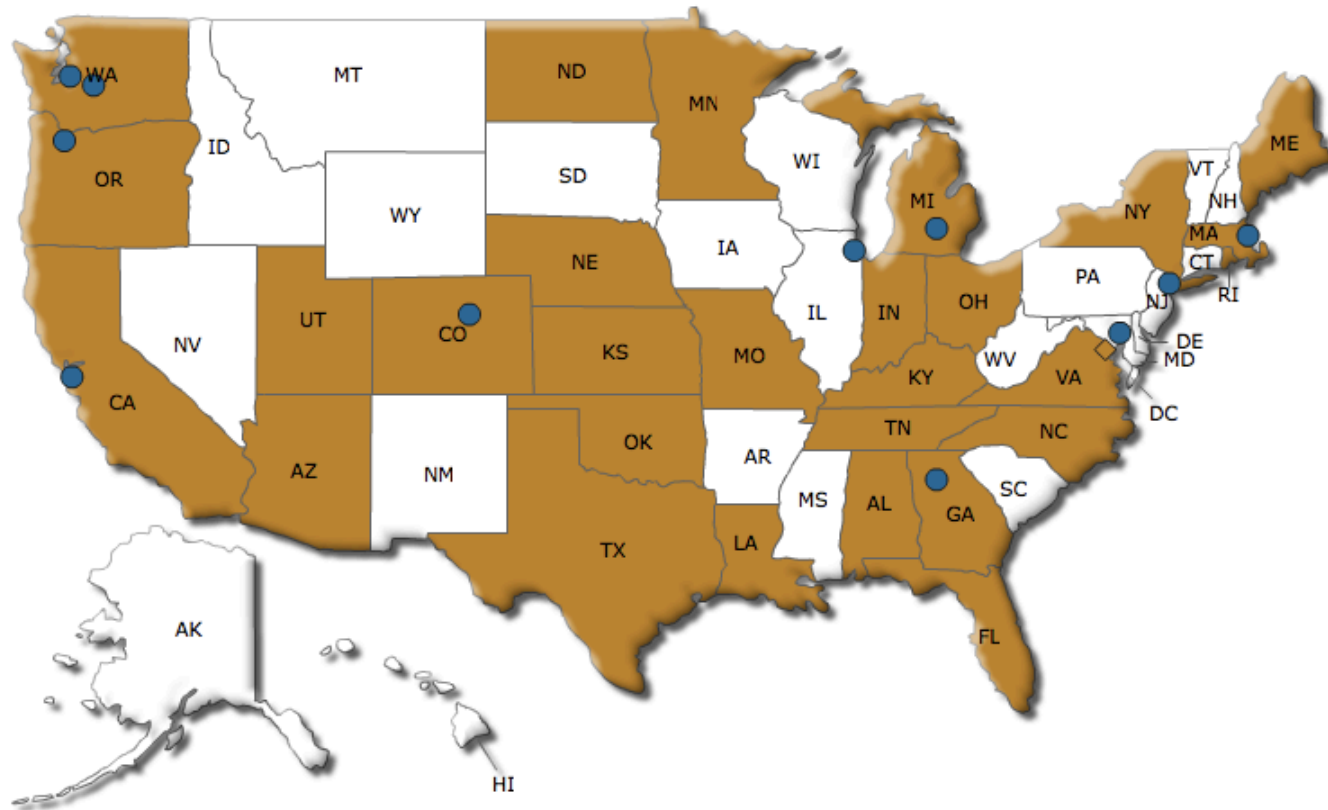
– Gandhi

US Open Government Action Plan



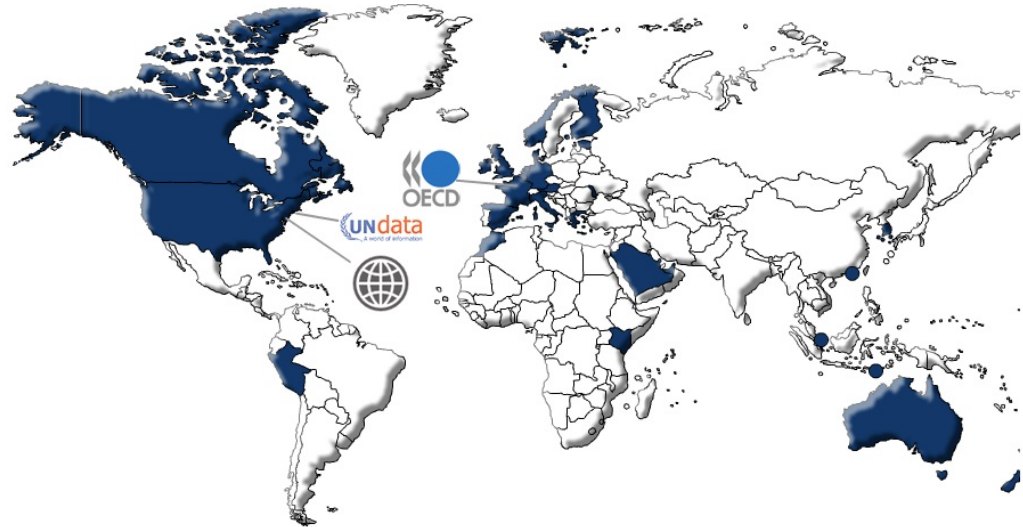
- On 20 September 2011, President Obama announced at the UN General Assembly...
- Contribute Data.gov as a platform
 - India and the U.S. creating open source platform
 - Will allow any country to create open data site
- Foster communities on Data.gov
 - Health, energy, and law plus new communities in education, research and development, and public safety
- Launch International Space Apps Competition
 - NASA and other space agencies will gather scientists and citizens
 - Use data for global challenges: weather impacts on global economy and depletion of ocean resources
 - A collaboration website will be created to facilitate citizen participation

Open Data at Cities, Counties, and States



U.S. States	U.S. Cities	Agencies and Subagencies	International
31	13	172	28

A Global Movement Has Begun to Provide Transparency and Democratization of Data



Don't see your site?
Update via @usdatagov



***Let's work together to set the
data free!***

**www.Data.Gov
@usdatagov**

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jholm@jpl.nasa.gov
@JeanneHolm, @cmoose**