

The background features a large, light-colored star in the center, with rays emanating from its top point, creating a sunburst effect. The rays are colored in alternating shades of yellow and light pink. The bottom half of the slide has a light blue background.

# NRRC Data Integration Plan for a Decision Support System

GIS Subcommittee  
July 16, 2013

**DRAFT FOR DISCUSSION PURPOSES ONLY**

# Charge to Subcommittee

“The Council [NRRC] shall develop a coordinated and centralized Geographic Information System database model that identifies current and future management priorities for designated land and natural resource areas.”

Executive Order 2013-02

# Expanded charge

The system should provide for full data integration across the agencies and be scalable and transformable for other state agencies and able incorporate data from relevant federal agencies.

June 3, 2012

The system should provide the framework for the NRRC Clearinghouse.

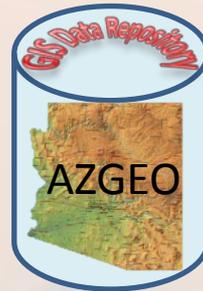
June 25, 2013

# System Design

**NRRC**  
User Interface/Catalog

Documents  
& data

GIS data



# User Interface

The screenshot displays the USGS National Map Viewer interface. The browser address bar shows the URL [viewer.nationalmap.gov/viewer/](http://viewer.nationalmap.gov/viewer/). The page title is "USGS The National Map Viewer". A search bar is located at the top center. The interface includes a toolbar with various map tools and a sidebar on the left for layer management.

**Overlays:** Selection, Cart

**Standard:** Advanced, Annotation, Active Tool: Identify

**Results:** Identify Layers

**Showing 1 - 10 out of 208 from last results.**

- A** [aasqgeothermal/AZWellLogs](#)  
aasqgeothermal/AZWellLogs > WellLog  
[Zoom To](#) [More](#)
- B** [aasqgeothermal/AZWellLogs](#)  
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[Zoom To](#) [More](#)
- C** [aasqgeothermal/AZWellLogs](#)  
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- D** [aasqgeothermal/AZWellLogs](#)  
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- E** [aasqgeothermal/AZAqueousChemistry1\\_10](#)  
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- I** [aasqgeothermal/AZAqueousChemistry1\\_10](#)  
aasqgeothermal/AZAqueousChemistry1\_10 > WaterQuality  
[Zoom To](#) [More](#)

The map shows the southwestern United States, including Nevada, Utah, Colorado, California, and New Mexico. Major cities like Reno, Carson City, Modesto, Fresno, Las Vegas, and Albuquerque are visible. The map is overlaid with several data layers: a dense grid of pink squares, blue circles, and red triangles. A green circle with a white 'A' is highlighted on the map. The interface also includes a toolbar with various map tools and a sidebar for layer management.

# Architecture components

- Catalog:
  - Listing of all state information resources
  - Access controls: public vs. state internal
  - Search interfaces for people and machines
  - Metadata in tiered formats
  - Discovery and access to federal data
- Data Service
  - Direct access to maps (Web Map services)
  - Direct access to structured data records (spreadsheets, databases)

# Architecture components

- File repository
  - Web accessible files
  - May be managed (DocuShare, Sharepoint)
  - Metadata encouraged for files in catalog
  - Access control and file management by owning agency
- Notification system
  - Single Point of Contact (SPOC) for Federal notifications to state agencies
  - Provides subscription service to alert appropriate state authorities of new notifications
- Applications
  - Work space for agencies
  - Collaboration space
  - Allow agencies to maintain portals to system and their apps

# NRRC Clearinghouse Subcommittee needs and requirements

## ***Primary requirements***

- Dropbox for documents
- Links to URLs
- Notification triggers to agencies
- Work space for agencies
- Storage for agency responses
- Access controls

## ***Secondary requirements***

- Log-in system
- Access levels to allow public accessibility to some materials
- User accounts with registration
- Version controls

# Clearinghouse – Council discussion

Integrate documents from existing document management systems

ADWR – Docushare (Xerox)

ADEQ – Sharepoint (Microsoft)

ADEQ – *permit tracking system*

AZGS – CKAN, Github, Sharepoint

ADOT – 3 systems plus many not in a system

Allow each agency to maintain their internal systems

(ie, don't have to convert documents, or change systems)

Provide open source, free options for agencies without DMS's

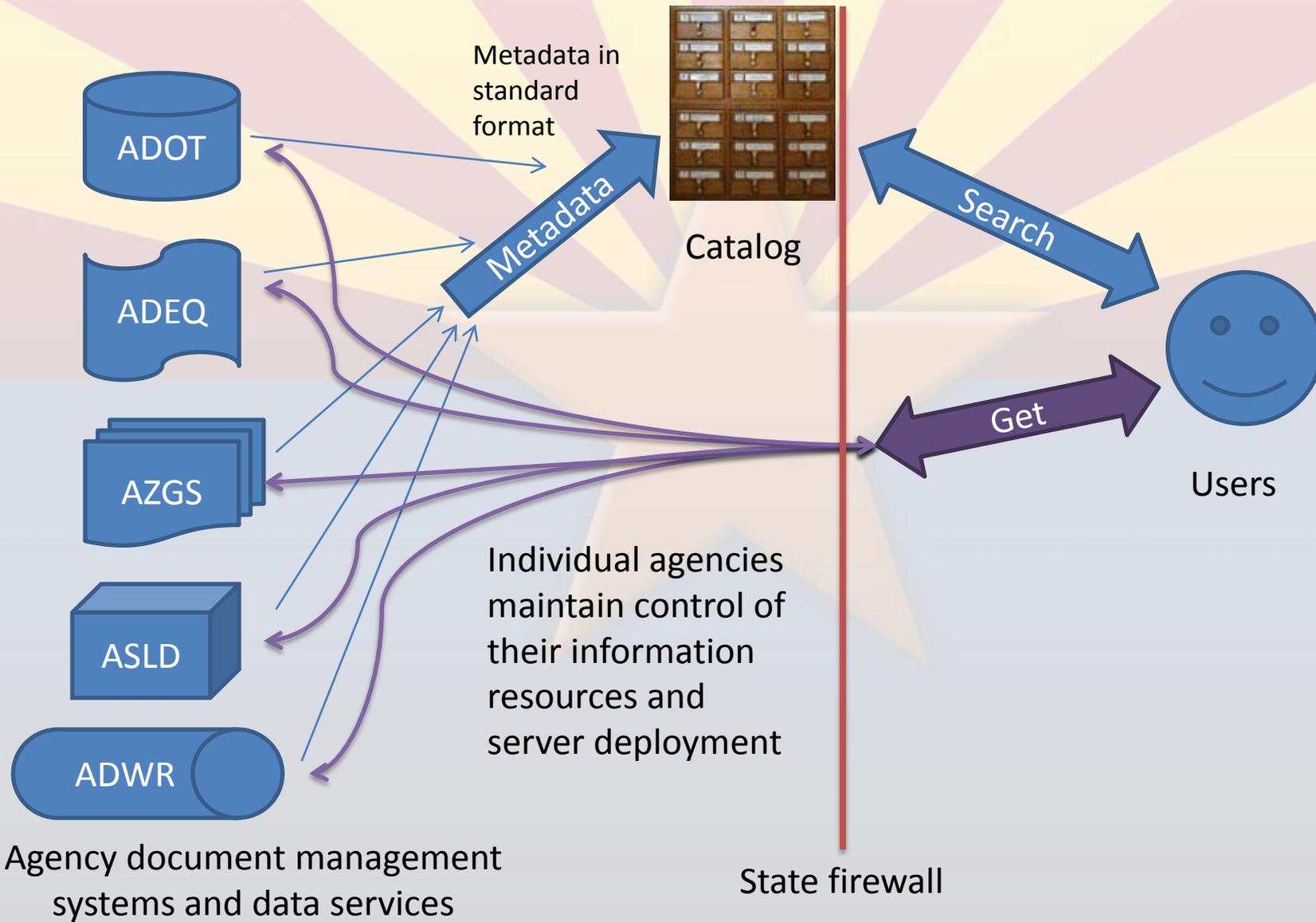
Automatic integration of federal documents into system

Clearinghouse to be designated AZ Single Point of Contact (SPOC)

in accord with 1982 WH Executive Order 12372 (amended 12416)

Allow each agency to have their own portal into clearinghouse

# Clearinghouse: documents and data



# Data distribution in other states

<b>Distribution Format</b>	<b>Access Type</b>	<b>Numbers of States</b>
Website download	Download	37
FTP	Download	8
Email	Download	3
Database	View, Download	1
ArcGIS Services	View	13
WMS (Services)	View	12
WFS (Services)	View, Download	4
Viewer (Online application)	View	12
Viewer Download (Online application)	View, Download	4



# RDCC Project Management System

Public Lands Policy Coordination Office • Resource Development Coordinating Committee

Projects

Government Agency Login

Utah.gov

Main PLPCO Site

## Projects

### Project Search

Search by project number, title, or sponsor:  
Click [Advanced Search](#) for more options.

Search

Include Stream Alt?

[click here for search examples](#)

### Current Projects

Id	Title	View	Status	Agency	Comment Deadline
39203	New Route Designations near Red Canyon and Peters Point Ridge	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/29/2013
39202	Foundation Energy MGMT LLC proposes to drill three new gas wells in the ...	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/29/2013
39200	Draft EIS--TransWest Express Transmission Project	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	08/23/2013
39182	Gooseberry Mesa Trailhead Expansion	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/22/2013
39181	Lower Rocky Pass Riparian Improvement Project for Boreal Toad	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/25/2013
39180	Enefit American Oil Utility Corridors EIS	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/11/2013
39160	SULA 842 Amend #1 - Abajo Substation Expansion	<a href="#">[view]</a>	Comment Period Open	School and Institutional Trust Lands Administration	07/30/2013
39140	Wheeled Pier at Bear Lake - Easement 400 00266	<a href="#">[view]</a>	Comment Period Open	DNR/Division of Forestry, Fire & State Lands	07/23/2013
39124	Amendment of Easement for Natural Gas Pipeline	<a href="#">[view]</a>	Comment Period Open	DNR/Division of Forestry, Fire & State Lands	07/24/2013
39123	Mexican Mountain Airstrip Maintenance	<a href="#">[view]</a>	Comment Period Open	DOI/Bureau of Land Management	07/17/2013

[Download Results](#)

693 Items

Page:  of 70

Show:

# Initial WRP Principal Organizations

## Federal Agencies

- Air Force
- Army
- Army Corps of Engineers
- Bureau of Land Management
- Bureau of Indian Affairs
- Bureau of Reclamation
- Customs and Border Protection
- Federal Aviation Administration
- Federal Emergency Management Agency
- Federal Highway Administration
- Marine Corps
- National Park Service
- Natural Resources Conservation Service
- Navy
- Office of the Secretary of Defense
- U.S. Environmental Protection Agency
- U.S. Fish & Wildlife Service
- U.S. Forest Service
- U.S. Coast Guard
- U.S. Geological Survey

## States

- State of Arizona
- State of California
- State of New Mexico
- State of Nevada
- State of Utah



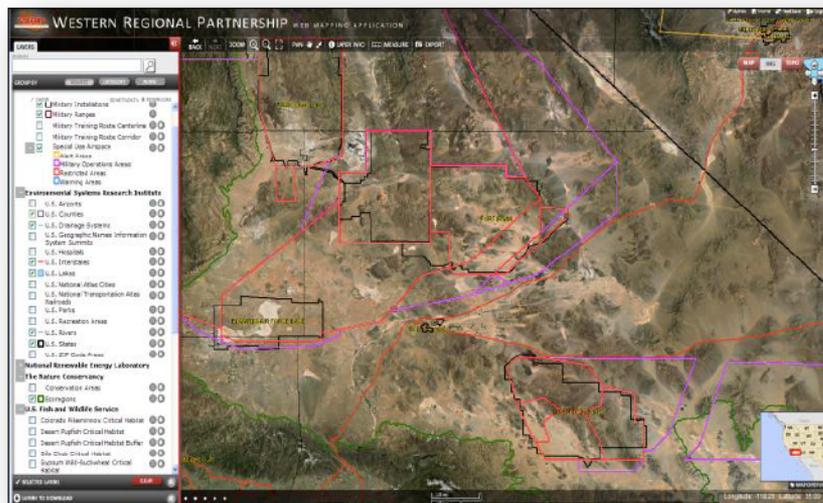
# Federal data streams: WRP

~10,000 GIS layers, land use, land management



## WRP Web Mapping Application (WMA)

The Western Regional Partnership (WRP) developed the Web Mapping Application to assist partner planning efforts in the region. The application displays spatially referenced data using a common platform and publically available data. To take full advantage of the mapping tool, WRP partners need only an internet connection, web browser, and WRPinfo.org user account. The mapping application references GIS data contained in the WRP regional GIS database, which includes datasets from WRP state, federal and non-governmental partners.



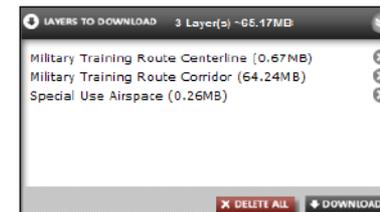
### WMA FEATURES

**Data Layer Search, Grouping, and Location Filter**



*Find the layers you are looking for via keyword search or browse data layers by source agency or thematic grouping. Data may also be filtered by location, i.e. Mojave ecoregion.*

### Download Data

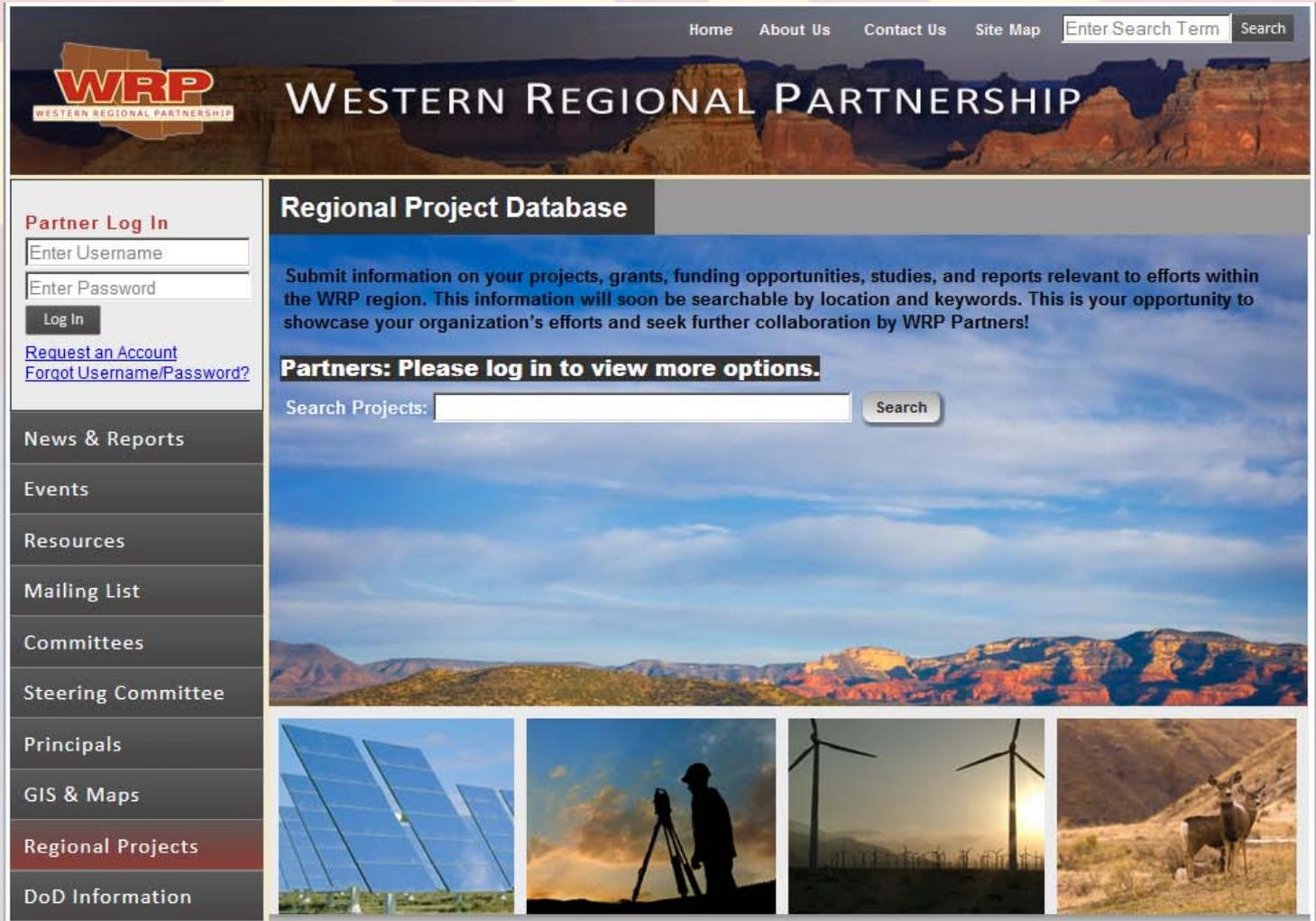


*State and Federal Partners may download GIS data in ESRI shapefile format directly through the application.*

**Choose from Multiple Basemap Options**

MOU in place for GIS integration

# Western Regional Partnership



The screenshot shows the homepage of the Western Regional Partnership website. At the top, there is a navigation bar with links for Home, About Us, Contact Us, and Site Map, along with a search bar containing the text "Enter Search Term" and a "Search" button. The main header features the WRP logo (Western Regional Partnership) and the text "WESTERN REGIONAL PARTNERSHIP" over a background image of a desert canyon. Below the header, the page is divided into several sections. On the left, there is a "Partner Log In" section with input fields for "Enter Username" and "Enter Password", a "Log In" button, and links for "Request an Account" and "Forgot Username/Password?". Below this is a vertical menu with links for "News & Reports", "Events", "Resources", "Mailing List", "Committees", "Steering Committee", "Principals", "GIS & Maps", "Regional Projects", and "DoD Information". The main content area is titled "Regional Project Database" and contains a text block stating: "Submit information on your projects, grants, funding opportunities, studies, and reports relevant to efforts within the WRP region. This information will soon be searchable by location and keywords. This is your opportunity to showcase your organization's efforts and seek further collaboration by WRP Partners!". Below this text is a bolded instruction: "Partners: Please log in to view more options." and a search bar with the text "Search Projects:" and a "Search" button. The bottom of the page features a large background image of a desert landscape with mountains and a blue sky, and a row of four smaller images: solar panels, a person with a surveying instrument, wind turbines, and a deer in a field.

# *White House Executive Order – A Game Changer?*

## *Making Open and Machine Readable the New Default for Government Information*

- calls for government information to be managed as an asset throughout its life cycle to “promote interoperability and openness, and.... to ensure that data are released to the public in ways that make the data easy to find, accessible, and usable”

White House, May 9, 2013

# *White House OSTP*

Collect or create information in a way that supports downstream information processing and dissemination activities

- Use machine-readable and open formats

- Use data standards

- Ensure information stewardship through the use of open licenses

- Use common core and extensible metadata

Build information systems to support interoperability and information accessibility

Create and maintain an enterprise data inventory

Create and maintain a public data listing

February 2013

# *OMB Memo*

“Making information resources **accessible, discoverable, and usable** by the public can help fuel entrepreneurship, innovation, and scientific discovery....

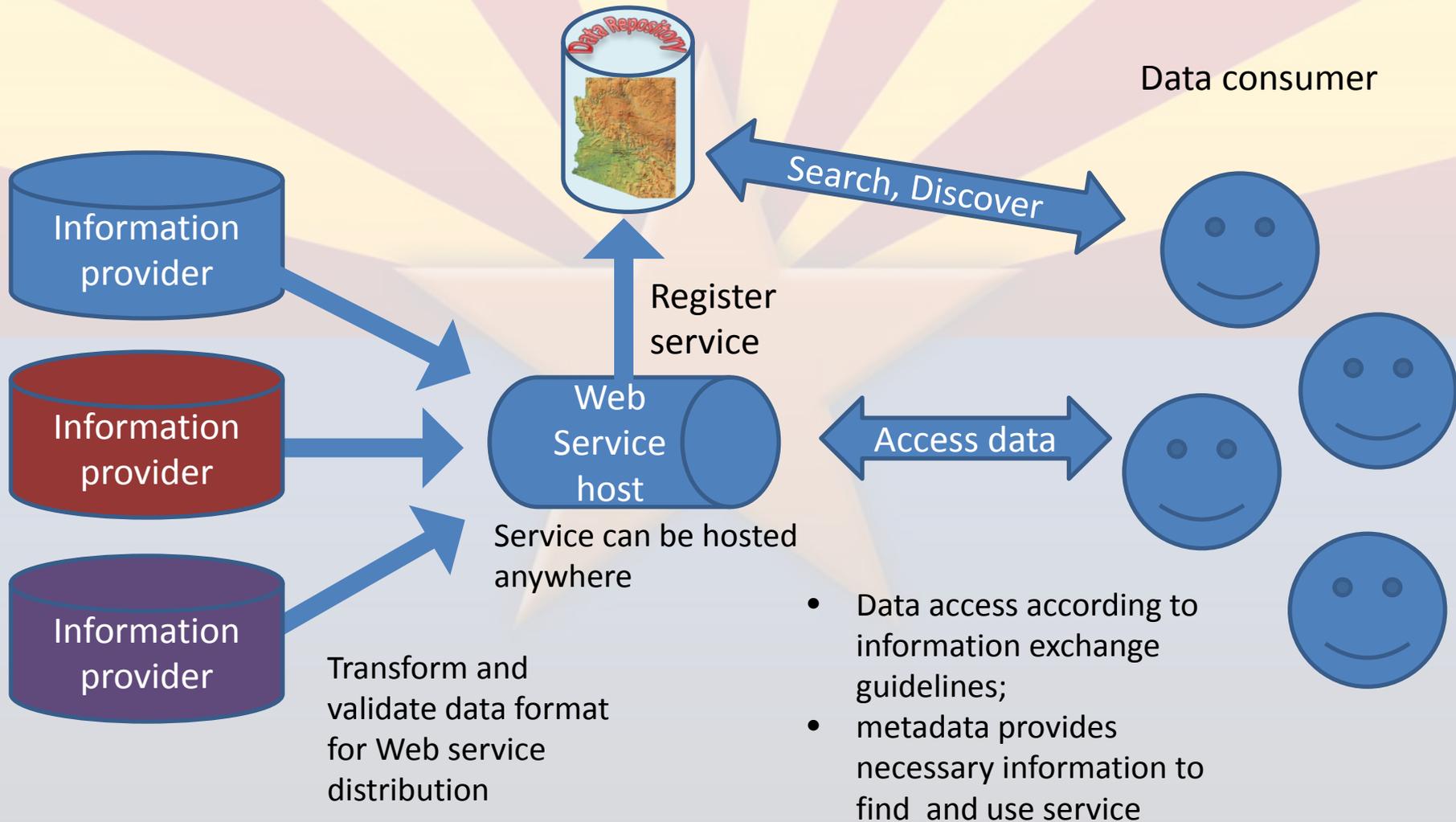
“...requires agencies to collect or create information in a way that supports downstream information processing and dissemination activities. This includes using **machine-readable and open formats, data standards, and common core and extensible metadata** for all new information creation and collection efforts”

“...building or modernizing information systems in a way that maximizes **interoperability** and information accessibility...”

“The system design must be **scalable, flexible, and facilitate extraction of data in multiple formats and for a range of uses** as internal and external needs change, including potential uses not accounted for in the original design.”

May 9, 2013

# Data services: operation



# Clearinghouse: Notifications

## Federal Agencies



Notifications can originate from any authorized agency- Federal, State, or Local

Notification of action



Notification of action

Subscription

Search

Comment

Notification subscription

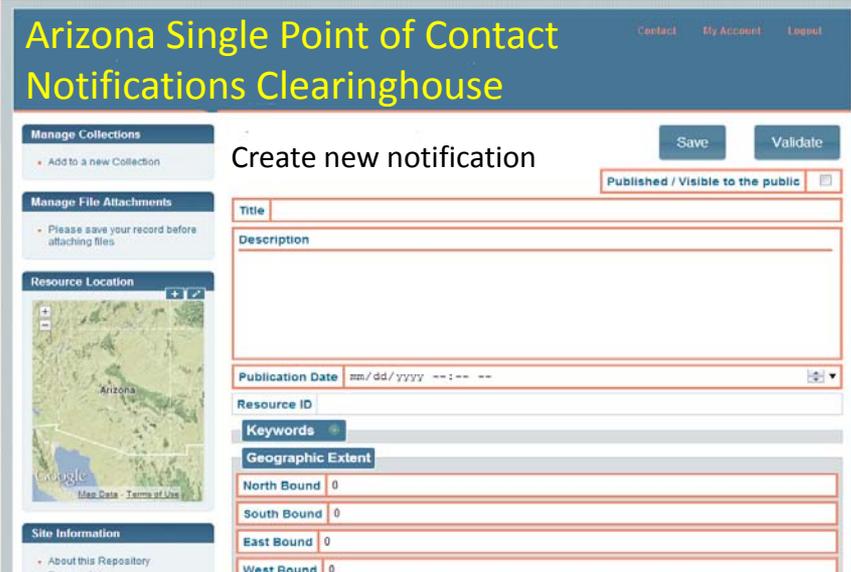
Response

## State Agencies



# Notification operations

- Post notification:
  - Web form
    - Accessible to authorized state and federal agency contact points
  - Notification publish/Subscribe
    - Management agency posts notifications in a standardized format to a publishing end point
    - Clearinghouse harvests notifications
- ‘Scrape’ existing sites (e.g. WRP Regional Project Database)



The screenshot shows the 'Arizona Single Point of Contact Notifications Clearinghouse' web interface. The header includes 'Contact', 'My Account', and 'Logout' links. The main content area is titled 'Create new notification' and features a 'Save' button and a 'Validate' button. A 'Published / Visible to the public' checkbox is present. The form includes several input fields: 'Title', 'Description', 'Publication Date' (with a date picker), 'Resource ID', 'Keywords', and 'Geographic Extent'. The 'Geographic Extent' section contains four input fields for 'North Bound', 'South Bound', 'East Bound', and 'West Bound', each with a '0' value. On the left side, there are three panels: 'Manage Collections' with an 'Add to a new Collection' link, 'Manage File Attachments' with a note to save records before attaching files, and 'Resource Location' which includes a map of Arizona. At the bottom left, there is a 'Site Information' section with links for 'About this Repository' and 'Terms of Use'.

# Notification subscription

1. User sets up subscription:

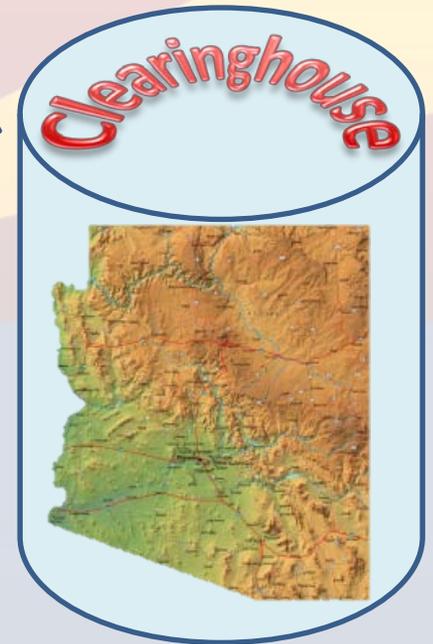
defines criteria for notifications of interest  
Area, type, keywords, source agency...

2. Notification posted  
meeting criteria

3. Clearinghouse e-mails  
alert to subscribers

4. Subscriber posts  
comments in response, takes  
any other necessary actions

5. State SPOC summarizes  
comments and responds to  
notification

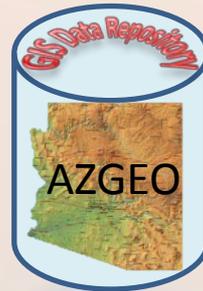


# System Design

**NRRC**  
User Interface/Catalog

Documents  
& data

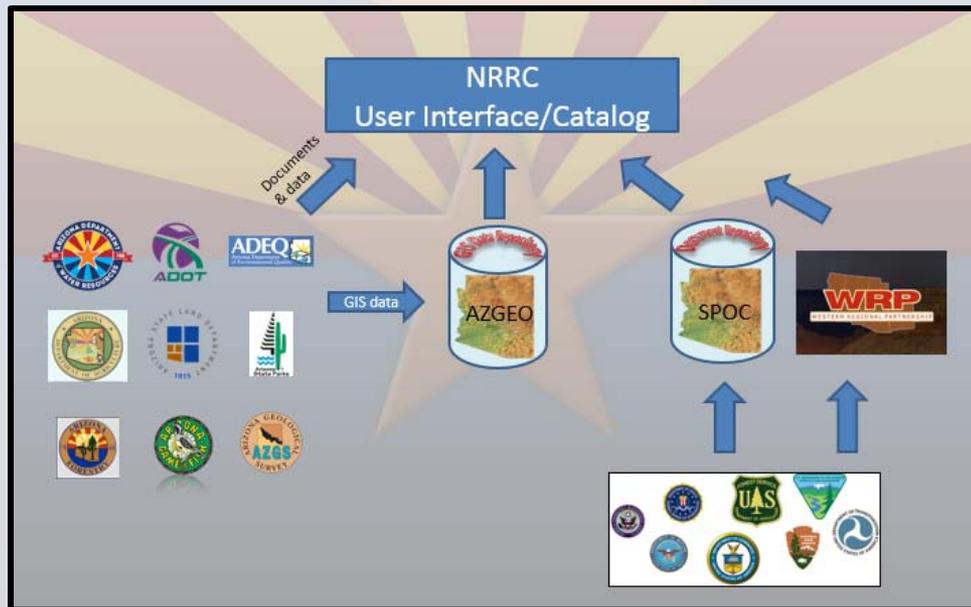
GIS data



# Phase 1

Use off the shelf capabilities to link three modules through an integrated catalog listing materials from:

- a state GIS clearinghouse (adopting AGIC's AZGEO for this),
- an online catalog of agency document repositories (using the AZGS document/data repository as a template), and
- federal documents and materials (harvested from AZ SPOC and WRP Regional Project Database)



# Phase 1

- Implement AZ SPOC by engaging Federal partners (e.g., via WRP, Open Data Project, etc) to supply AZ SPOC with digital notifications and documents
- Investigate the use of free text-analytic software to determine keywords and georeferencing information from these documents automatically as an alternative to federal keywording and georeferencing
- Provide free, open source software solutions to agencies that don't already have document or data management software in place

# Phase 2

- Deploy enhanced User Interface, with functionality for geographic (e.g., bounding box) and faceted search of the AZ SPOC and agency resources available to NRRC
- Promote the integration of data and documents from different sources and different software through standard OGC data services
- Accommodate agency-specific analyses of AZ SPOC materials
  - Accommodate and encourage software applications developed by anyone
- Training and help to state agencies on digital standards, exposing data in compatible formats, and creating Web services to share data and documents

# Costs & Timeline Phase 1

System components: 200-400 hours technical

Deployment: 200-400 hours?

Agency digitizing: 1-3 years??

AZ SPOC population: depends on federal agencies

# Strategy

How do we implement this?

Proposal for system: NRRC or designate lead agencies?

Agency digitizing efforts

How to prioritize it in agency budgets