

Geospatial Platform:

Concepts, Roles, and Responsibilities for Communities and Groups

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The Geospatial Platform



Federal Geographic Data Committee

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This document was created in a collaborative effort by a group of Federal and State agencies testing the inaugural Geospatial Platform capabilities for use as part of a Hurricane Response community. Participants included: Department of Interior, U.S. Geological Survey, EROS, Federal Geographic Data Committee Office of the Secretariat, Department of Commerce/National Oceanic and Atmospheric Administration, Department of Homeland Security, Federal Emergency Management Agency, Texas Natural Resources Information System, with technical support from Esri.

The group also created a video providing a use-case example showing how the collaborative map products can be created and how they would apply in relation to a hurricane event. All these efforts were accomplished utilizing virtual meetings and centrally registered, remotely managed geospatial data services.

Background

The Geospatial Platform is an Internet-based service environment that provides a suite of well-managed, highly available, and trusted geospatial data, services, applications, and tools for use by Federal agencies and their State, local, Tribal, and regional partners in fulfilling their missions. The Geospatial Platform focuses on web applications that facilitate participatory information and data sharing combining rich data resources with map authoring and publishing capabilities. It is designed to promote data sharing and collaborative solution development through interoperability, user-centered design, and collaboration on the World Wide Web and is accessible from servers, desktops and mobile devices. The underlying data and services registration, search, and discovery catalog is jointly developed and managed between the Geospatial Platform and Data.gov, integrating capabilities and process steps in support of broad government data and information use.

Developed by the Federal Geographic Data Committee (FGDC) agencies, the implementation of the Geospatial Platform is guided by the *Business Plan for the Geospatial Platform (Business Plan)*. The *Business Plan* describes the Geospatial Platform's value proposition, concept of operations, governance and organizational structure, and strategies for funding, risk management, and performance monitoring. The *Business Plan* directs the establishment of a Geospatial Platform Oversight Body that will oversee operations and act as a type of change control board. This body will include involvement from non-Federal government agencies.

The primary value of the Geospatial Platform is that it combines access to centrally accessed, remotely managed, common geospatial data, services, applications, and infrastructure with geospatial collaboration tools. The collaboration environment is made possible through the live sharing of data and map services enabling multiple people and organizations to share a common view of individually managed map content. This is accomplished by the development of topically focused "communities" that enable users to cooperatively search, develop and share data, create common map views, embed those map views into community pages where additional contextual information is provided, and develop online information products for use across the members or for sharing with decision-makers and/or the public. Geospatial Platform communities can be customized around organizations, special topics, events and other areas of interest to promote group interaction and advancement of issues and topics. These capabilities are designed to enable collaborative understanding, analysis, and solution development to address business and mission issues, priorities and processes, supported by multiple agencies and partners. This provides and supports a consistent representation, approach, and/or response to a given issue, utilizing geospatial information as a cornerstone for understanding.

Purpose

This document is an informational aid for agencies in the establishment, use, and management of topically focused "communities" and "groups" on the Geospatial Platform and identifies key roles, responsibilities, and activities involved.

This document does not provide detailed technical implementation steps but focuses on processes, decisions, issues, and lessons learned about the implementation and management of Geospatial Platform communities and groups of which agencies should be aware and consider before and during

implementation. These initial considerations were developed by a collaborative group of Federal and State agencies that established the inaugural Geospatial Platform group that was focused around hurricane response activities, as part of the overall Geospatial Platform development effort.

This document presents:

- Primary concepts and components of the Geospatial Platform,
- A process for the establishment of communities and groups and their management, and
- Lessons learned and considerations to take into account when utilizing the Geospatial Platform.

As the Geospatial Platform and its supporting technologies continue to develop and mature, the applicability of some of the items discussed herein may change. Geoplatform.gov refers to the Geospatial Platform's website (<http://www.geoplatform.gov>).

Geospatial Platform Communities

Much of government business requires collaborative efforts between and across agencies to address multiple aspects of an issue, whether it is managing Federal lands, ensuring food safety, assessing impacts of sea level rise and coastal flooding, or any number of issues, priorities, or business functions¹. An extensive amount of government data is geospatial or has a geospatial component (i.e. can be associated with a location based on an address, place name or coordinate) and various data exists within many agencies and within and across many non-federal partner organizations that needs to be used to visualize and understand an issue.

Communities are about people. The technology provides the tools that enable the communication of information, thoughts, data, and products that people use to do their jobs better. Strong and active communities rely on strong leadership and participation of the right people to ensure credibility and sustainability. The agencies and their partners who establish communities (and the access control groups for published content) on the Geospatial Platform are responsible for building and sustaining the community of people required to meet the community's goals. The geospatial technology of the Geospatial Platform provides the tools required to combine geospatial analysis tools with Internet and social media capabilities to enable the community members to collaboratively address the communities' focus issue(s). The Geospatial Platform Managing Partner and Oversight Body are responsible for ensuring the right tools are available and function properly.

The Geospatial Platform provides an Internet-based approach for coordinating the preparation, publication, and public release of data, services, and applications. Geospatial platform tools enable users to register data and basemap services, create map mashups, set rendering, symbology and attribute query parameters, and create webmaps and Web applications that provide geospatially-based information products. These geospatial information products can then be integrated into (linked from) "community" pages where they are wrapped with additional contextual information, collaboration tools, resource links, points of contact, and other information important to understanding and addressing multiple aspects of a particular issue.

¹ http://resources.geoplatform.gov/sites/default/files/2011-11-1_Geospatial_Platform_Value_Proposition_FINAL.pdf provides some examples of use cases.

“Communities” are manifest as a set of managed web pages within the Geospatial Platform site that provide broader context for an issue and feature data, maps (galleries), webmaps, and applications recommended or developed by the community to help understand or address their particular issue of topic. A community space provides information and tools such as a document sharing environment, blogs, links to agency specific information sites, calendars, and other collaboration tools. Communities utilize the geospatial map products registered with the Geospatial Platform as one of many resources utilized to understand, address, track, and in multiple ways collaborate around an issue.

The communities, as organizational entities, will use and promote content whose access is controlled or managed by “group” affiliation, i.e. groups of registered users with a common affiliation (see the “Groups in Geoplatform.gov – Managing User Access” section for more detail). Individual registered resources (data, maps, applications) may be associated with one or more groups and accessed by multiple communities, or by all users.

For example: for hurricane response, a Geospatial Platform “group” was created to manage the registration of information only visible to the members of the group until such time as the members agree to make it visible to everyone (this may include releasing it to the “public” users who access resources that do not require a login or password). Based on the requirements of the HR group members, data services, webmap services, basemap services, and applications are registered with the Geospatial Platform then shared with the group. These shared services help provide collaborative understanding, situational awareness, cross-agency data integration and view, and decision support related to various stages or aspects of a Hurricane. Group members from multiple agencies and with various perspectives on an issue collaborate on information products that will provide the highest value for the targeted users. Once a data or webmap is registered with the Geospatial Platform, it can be shared with a specific user, group, or with the public who then has the ability to search and discover it and reuse it².

This enabled the multiple Federal agencies to register dataset services (storm track, roads, impact models, boundaries) and develop collaborative webmaps aggregating Federally sourced hurricane data into a collaborated web-based “map” service (i.e. webmap). This webmap was then used by the state of Texas who registered their State/local data with the Platform and overlaid it on top of the Federal resources enabling the State to leverage the Federal data without having to recreate, replicate, or manage copies of the Federal data. Likewise, the State shared their data services with the group so that the Federal agencies can leverage and understand the data the local entities are relying upon. As the underlying data changes (e.g. features are added, deleted, or have attributes changed), the shared services automatically reflect those changes since the service end-points stay the same. As of the writing of this document, the Community website module that will support a broader HR community – a Community-specific web Framework – was not yet available.

² Groups and communities are membership based and data access can be controlled and managed.

Conceptual Diagram

A powerful aspect of the Geospatial Platform portal is the ability to create “groups” of registered users who are collaborating on addressing a common topic or issue. These virtual meeting places have

managers and members who can provide contextual information on an issue, topic, or priority and provide tools for cross-agency and partner collaboration. Members can discover and register data services, can utilize shared geospatial tools to

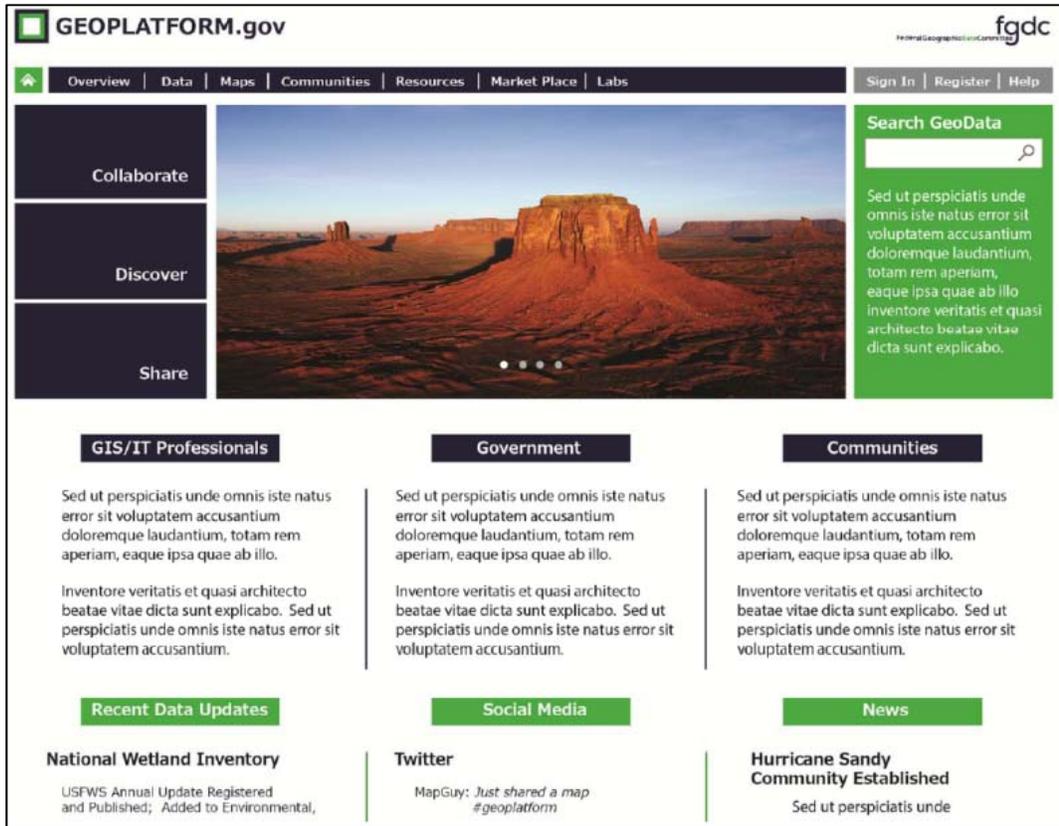


Figure 1: Geospatial Platform Homepage (through early 2013)

create groups, create common basemaps for

the group’s use, create map views of specific combinations of data and symbology, and share these products with the group, a community, or for public users of the Geospatial Platform. The Community web pages are also a primary means for a community to nominate or promote specific geospatial resources and provide context for their use.

The intent of the Hurricane Response group was to support Federal, State, and other agencies and partners with Hurricane Response roles with means to upload, symbolize, view, and integrate geospatial data from multiple sources to meet mission requirements, and selectively share the resources with the group or the public. Collaboratively developed map views can then be used to present consistent pictures of the data and information for all users, accessible from a single place. Data from NOAA, USGS, State, and other sources can be combined into useful, consistent views with input from all community members, creating views that are most useful in supporting the business needs of each user.

Figure 1, shows the Geospatial Platform homepage design (up through early 2013). Users register with the Platform/data.gov environment and affiliate themselves with one or more access control groups that may be aligned with Communities. Once a user joins a specific group, they have access to webmapping tools, map views and data whose use is limited to only the members of that group. This enables a group's members to collaboratively develop a product prior to sharing it with the public. Publishers may also develop and publish geospatial resources that are agency-approved and are immediately available to the public and Platform for re-use.

Figure 2, shows a conceptual diagram of the communities and groups concept where multiple communities exist within the Geospatial Platform, each community has membership and managers, and the community members collaborative around common issues, topics, and national/regional priorities. Based on permission controlled access, members can: develop and participate in groups to register collections of geospatial data and services, create webmap service templates from multiple data/information sources, promote map products to their community page for highlighting and use by the community, then publish group specific or public views to provide common information and data products based on their group's area of focus. This shared community and geospatial data and map services environment transcends specific agency systems and can therefore be accessed and used by multiple governmental agencies and partners simultaneously. Agencies may also develop and publish data sources, webmaps, and applications, and have them harvested into the Platform by registering their ArcGIS Portal or ArcGIS Online (AGOL) for Organizations instance with the Platform. All resources nominated by the external agency become visible and actionable within the Platform environment.

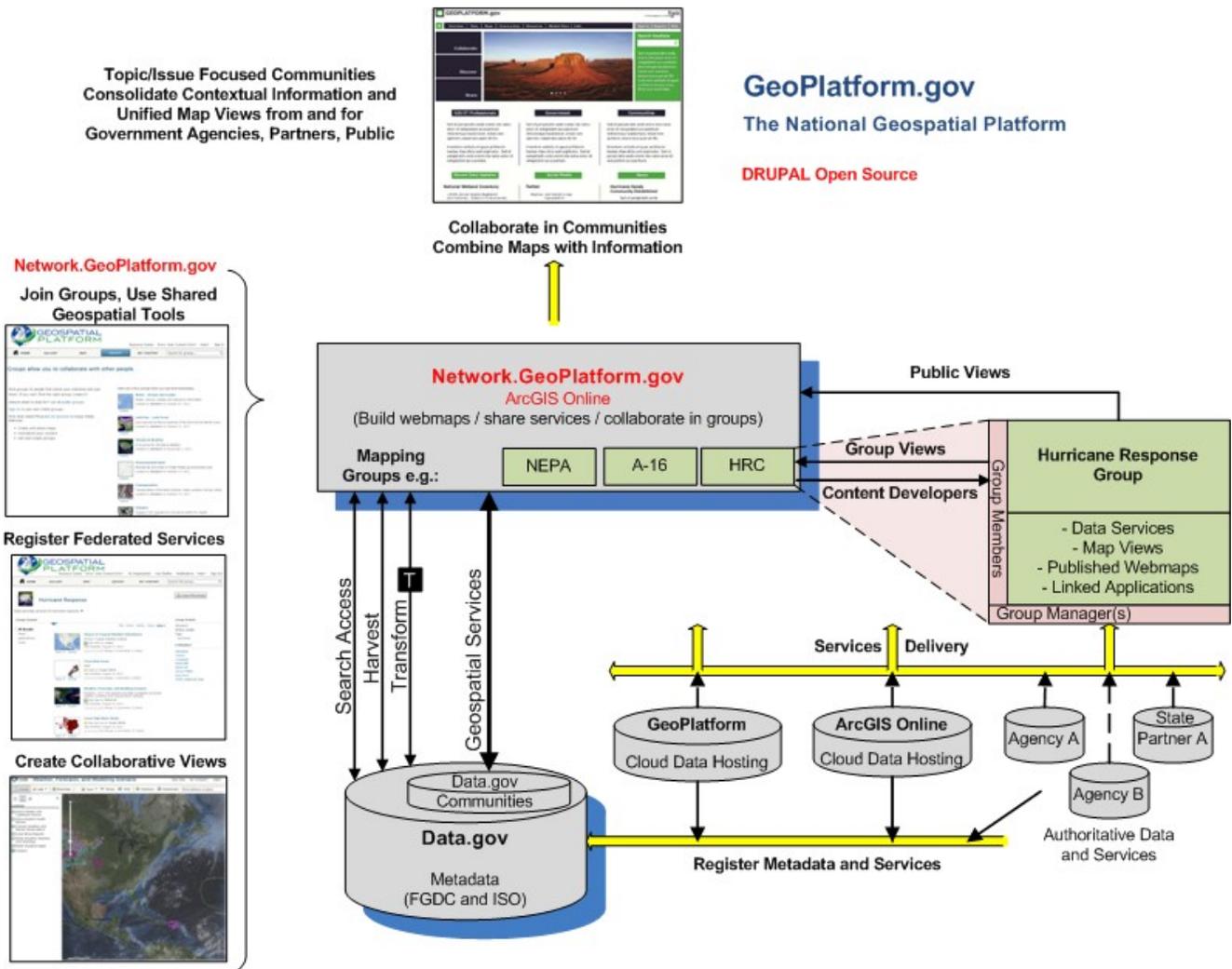


Figure 2: Geospatial Platform Conceptual Diagram (January 2012)

Geospatial Platform User Community

The management of the communities and groups, and therefore the content that is shared, should be led by the agency/ies with the key mandates or requirements for the community's focus area. This approach supports a key premise of the information available through the Geospatial Platform – that it has a known level of authentication and authority. A distinguishing factor of the Geospatial Platform (and the data.gov infrastructure) is that data, and the information products created from that data, are official and have a level of reliability and dependability vouched for by the contributing agency. This requires active management of the data and information content being shared.

The *Business Plan* states that the Geospatial Platform Oversight Body "... will also include involvement from State, local, regional, and Tribal governments". This reflects the expectation that, within

Federal guidelines, non-Federal governmental representation will help guide the development of the Geospatial Platform in order to provide a direct mechanism for requirements development. It will be important, if the non-Federal constituents are to be part of developing collaborative solutions, that they have a say in what they need, can provide, and how the Geospatial Platform can provide them the highest value. The organization and membership of the Geospatial Platform Oversight Body is projected to be determined in 2013.

Initial and Potential Community Types

The Geospatial Platform community and group collaboration approach initially supports two high-level goals:

1. Improve access and use of data for addressing mission, priority, or business-focused issues requiring multi-agency collaboration (i.e. understand, address, find solutions, help decision-makers), and
2. Support the coordination and lifecycle management of geospatial data (i.e. provide collaboration tools for communities that have a geospatial data development mission, particularly the National Geospatial Data Asset (NGDA) data themes and datasets as per Office of Management and Budget Circular A-16).

Other secondary utilizations potentially include:

- Agency, internally-focused communities managed through the national Geospatial Platform
- Project specific communities that provide collaborative tools and work space for smaller efforts involving multiple agencies and/or government and private users.

It should be noted that other types of communities are envisioned for deployment through the Geospatial Platform. These include but are not limited to:

- Event-based communities – collaboration in response to or anticipation of a specific event
- Geospatial Marketplace – for collaboration on planned geospatial investments
- Data Acquisition as a Service – information and tools available across government for data development and/or purchase
- Developer’s Workbench – where computer code and other developer information and resources are shared.

Roles of Agency Platform Portals and the National Geospatial Platform Portal

The national Geospatial Platform is designed to enable collaborative understanding, analysis, and solution development to address business and mission issues, priorities and processes. It operates on a shared infrastructure utilizing cloud computing to provide internet accessible workspaces where multiple agencies and partners collaborate and share information in order to develop and provide information and geospatial products that provide a consistent understanding, approach, and/or response to a given issue. The ability to have multiple agencies, offices, and partners working collaboratively in a shared online geospatial mapping environment (not agency specific) with shared tools and data is a primary distinguishing factor between the “national” Geospatial Platform and agency specific platform implementations.

Over the past couple of years, agencies have established agency-specific geospatial platforms. Their primary intent is to provide a common organizational and data sharing infrastructure within the agency in support of more efficient access, use and cross-program collaboration. Most agencies have

geospatial data that is not intended for public consumption, either due to legal, policy, or other mandate restrictions, or due to the data's maturity, i.e. it is in development, stages of update, being validated, or otherwise being processed. As such, agency-specific platforms provide a valuable support capability to multiple intra-agency programs and efforts.

As the "national" Geospatial Platform continues to mature, some of its priority developmental efforts are focused on ensuring that the technology solutions being used will enable a clean transition for an agency's data and webmaps from their internal platform instance where it was developed to the national instance where it can be broadly consumed. The Platform will soon enable public-facing agency platform implementations (using Portal for ArcGIS or AGOL for Organizations) to be registered with the Platform in order to share those data, services, and applications with a broader audience in a common environment. This approach provides a number of incentives:

- An agency can utilize its agency specific platform to develop and revise information products within their agency-controlled platform prior to releasing them to the broader community – this adds quality and validity to the products, and as they are reused by others, adds consistency in understanding information and the conditions they describe.
- When it is ready, an agency can utilize the "national" Geospatial Platform as its public delivery mechanism and not have to support agency specific web sites as pieces of a broader collaborative effort. For example: a single community on the national platform can be used to deliver pertinent information that previously a user would have to visit multiple agency sites to access. Utilizing the Geospatial Platform increases information access efficiency, information use, and potentially reduces the cost to agencies for maintaining individual delivery sites and supporting hardware. This addresses issues of data center consolidation and potential duplication of effort as raised in recent governmental initiatives and reviews.
- Registering data on the national Geospatial Platform enables its search and discovery for broad reuse (accommodating the data's use restrictions), increasing the data's return on investment and making it available to more potential users. It may also prevent duplicative data development by making discovery of existing data quick and easy.
- The Geospatial Platform's registration processes are being developed to help agencies comply with federal requirements for data.gov, geospatial clearinghouse, and Geospatial Platform data registration, and implementation requirements of the OMB A-16 Supplemental Guidance. The Geospatial Platform is intended to help agencies comply with multiple data management and delivery requirements through a single registration process – this approach typically increases the ability of agencies to be compliant by reducing the required level of effort.

Current technology, security, and cost considerations do not make it feasible or cost effective to migrate large data holdings, data development efforts, or large band-width data services to the Geospatial Platform's shared cloud infrastructure. As such, the expectation is not that large Federal data holdings will be migrated to the Geospatial Platform, but that their data services will be registered and useable through the Geospatial Platform. This is another reason why agency specific platform instances can be valuable but not necessary, i.e. agencies will still need to maintain their internal large production and service capabilities and agency-specific portals while sharing a common underlying infrastructure.

Critical Success Factors

The Geospatial Platform provides a suite of well-managed, highly available, and trusted geospatial data, services, and applications for use by Federal agencies—and their State, local, Tribal, and regional partners. – Business Plan

In order to ensure this statement is true, critical success factors need to be considered from business operations and technical management perspectives. The business operations perspective refers to the way the Geospatial Platform communities and groups are used to support the business of government (execution), and the technical management perspective refers to the operation of the systems and technical capabilities of the underlying infrastructure and its management and maintenance. These two areas are co-dependent on each other for success and are developed in tandem.

Figure 3 depicts the primary areas of responsibility in relation to the management of components of the Geospatial Platform, as follows:

- The FGDC Steering Committee provides policy, guidance, and direction to the overall Geospatial Platform Shared Services initiative, based on the FGDC-developed Geospatial Platform *Business Plan*.
- The *Business Plan* establishes a Geospatial Platform Oversight Body (to be established in 2013) made up of Federal and non-Federal governmental members who provide the high-level operational (implementation) oversight for the Geospatial Platform. They get strategic guidance from the Steering Committee and provide implementation guidance and requirements to the Managing Partner.
- The Geospatial Platform Managing Partner, the Department of the Interior as per the *Business Plan*, is responsible for the platform's technology implementation. The Managing Partner oversees government staff provided by the FGDC partner agencies to work on the Geospatial Platform's implementation, and coordinates technical contractor staff that executes the operations. The Managing Partner is responsible for the design, stand-up, operations, and maintenance of the Geospatial Platform, and its technical operations, and uses a Technical Management Team (TMT) that consists of members of federal agencies with platform experience, the Managing Partner, and the FGDC Office of the Secretariat, with input from support contractors to execute its responsibilities.
- The Geospatial Platform's community and group leadership, and content and membership management, is performed by each community's designated lead members. When a community is established, the agency(ies) with the mandates or mission responsibilities for the community will identify persons within the community to manage its membership, content, associated mapping groups, and interactions with the TMT. While the TMT will provide the initial establishment of the community web pages and mapping groups and ensure they function properly, the community leads are responsible for the working with their community to provide content and membership management. The community leads will coordinate activities with the TMT to ensure they receive the support required and to minimize impact on the other components of the Geospatial Platform.

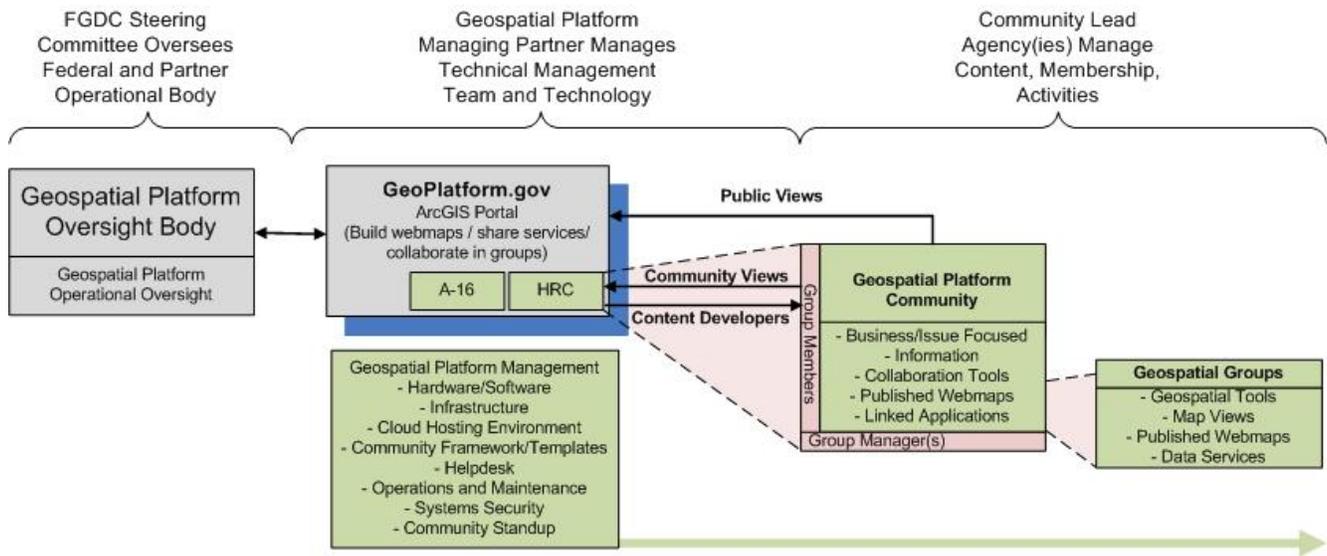


Figure 3: Geospatial Platform Primary Responsibility Areas

The following critical success factors focus on the Geospatial Platform communities (responsibility of the community lead agency(ies)) and the Managing Partner’s technical implementation (responsibility of the Technical Management Team (TMT)), and the relationships between them. Agencies establishing or managing a community through the Geospatial Platform need to take these factors into account. It should be clear that communities rely on their leaders and members for the majority of their function, content, and success.

Leadership

A community focuses on solving or addressing a business issue or area. The community lead agency(ies) with responsibility, oversight, or mandate to address the community’s focus issue must be engaged and part of the key leadership in the management and operations of those Geospatial Platform community(ies) and web mapping groups. If they are not engaged, the information and products will not have the same level of authority, and the potential for the publication of conflicting or lower quality information increases, e.g. other agencies publish/republish data since the primary source is not participating. The agency(ies) with the lead in the given business area must adopt the use of the Geospatial Platform as part of their business operations (in part or in whole) in order to ensure it delivers the information that makes it a trusted resource. Community and group leads need to be identified, available, and active.

The purpose and goals of the business area that a community addresses must be clear in order to define the scope of the content, the required tools, the appropriate and required membership, and to ensure clarity of purpose for the users. Reporting on the progress against the goals ties into the Geospatial Platform’s broader metrics tracking capability and discussions are occurring on what types of metrics should be tracked and what reporting capabilities made available to communities.

Technical Management

The FGDC member agencies approved and endorsed a joint funding model that provides the core financial support for the Geospatial Platform's technical operations. The DOI, as the managing partner, has the responsibility for ensuring the shared infrastructure, staff (contractor) resources, and technical/technology support required for the operations of the Geospatial Platform, its communities and groups, is in place and operating effectively, and that communication of issues, advances, and shortfalls are timely and clear. The community lead agency(ies) should have members who can effectively interact with the TMT to present requirements and work with the technical support staff.

The timeframe and schedule for the implementation of a new community, or the addition or development of additional technical capabilities should be clearly defined by the community lead agency(ies), in coordination with the TMT, to ensure the technical support is both available and able to accommodate the requirements. A goal for technical implementation is to minimize the impact to communities by putting in place standard processes to address typical changes that will need to occur after the initial stand-up of a community, e.g. membership changes, changes to community templates.

The Geospatial Platform continues to go through development spirals where priority technical enhancements and implementations are defined and scheduled. These activities support a broader range of implementation goals based on input from the managing partner, the core development team, the FGDC Steering and Executive committees, and agencies providing resources for targeted development.

Funding

Once the initial content is established and the permissions to manage a site's content are granted, the cost of managing and operating a community and its supporting group(s) is the responsibility of the managing agency(ies). The initial set-up of a community's and group's pages will include a combination of lead agency(ies) staff time (to develop material, format, compile information, learn how to operate as a lead, etc.) and the Geospatial Platform's TMT costs in staff (contractor) time. This time covers actions such as establishment of the new community and group pages, inserting initial content, training the community/group managers, and monitoring system activity to ensure proper functionality.

Operational costs associated with the content and maintenance of a community and group membership will be the responsibility of the managing agency(ies).³ The operations and maintenance of the Geospatial Platform's "core" capabilities and any updates or fixes to the "core" capability, are covered through the FGDC member agency's joint funding. Agencies requiring or requesting the incorporation of specific new functionality can provide funding, in addition to their joint-funding share if applicable, to specifically address their requirements. The Managing Partner will handle the

³ Questions about, or opportunities for, leveraging core funding for community/group specific activities is intended to be addressed by the Geospatial Platform Oversight Body once it and its rules of operation are established.

management of the integration of these types of requests until the Geospatial Platform Oversight Body establishes other operating procedures.

Personnel Availability for Managing Communities

The Geospatial Platform TMT provides a suite of tools for use in communities and groups, while the communities provide the content required to support the community's activities. The community lead agency(ies) provide the content, quality assurance of the content, manage the community and group roles, keep the data and information current, manage the activities and meetings of the members, monitor social media tools used, and provide feedback and requirements to the managing partner on any technology issue. Their responsibilities includes the decommissioning of a community once it is no longer needed (e.g. an event based community may sunset once the event is over) and ensuring any content that needs to be retained for record purposes is properly managed. The personnel who will lead the community and associated group(s) need to be identified, maintained, and active. While not available at this time, future options for providing services to agencies for the contracted management of their communities may become available.

Usability / Look and Feel

Communities should have a goal of providing their data, tools, and information in the most useful manner for their targeted users. Selecting from an initially defined set of tools designed to be utilized within standard community web page templates, a community lead agency's(ies') should determine the combination of tools that best meets their needs. The community lead agency(ies) are responsible for determining which of the available tools should be utilized to best support their community goals and user needs and should provide additional tool requirements to the TMT. Community tool and usability requirements may be more mature for already existing communities hosted through an agency-specific site. An existing community that wants to migrate a site currently agency-hosted to the Geospatial Platform's shared cloud infrastructure to either reduce hardware management costs, or to take advantage of the Geospatial Platform's shared tools or expanded accessibility should meet with the Managing Partner to discuss opportunities.⁴ Currently, the shared mapping tools will be based on the Esri ArcGIS Online service capabilities.

Data Availability and Access

A key component of a community and group supporting a business or mission area is the delivery of data, information, and services. This may include raw data (Federal raw data is provided in collaboration with data.gov), information products, contact information, geospatial/mapping data, access to online registries or services, and other technical capabilities. It is the responsibility of the community's managing agency(ies) to process, package, review, upload, manage, retain copies of, archive and otherwise provide and manage the communities data, and provide associated requirements (i.e. linking to an existing community application) to the TMT and managing partner. The community must operate within all of the Geospatial Platform's system security, access, and use requirements.

⁴ The available tool and template options for communities as well as the cloud hosting environment are still in development as of February 2013.

Business Process Requirements

Communities may require that specific business processes are followed by, or supported for, users, e.g. using a specific map template to develop a site map showing potential impacts, or filling in and submitting an information form. The Geospatial Platform is designed to provide communities the ability to combine statistical data and information with geospatial mapping information to increase the user's understanding. The processes a community puts into place to support the business requirements and community goals and the tools and products that support those processes are fundamental to the site's capabilities. The community lead agency(ies) are responsible for defining the processes to be implemented through the site and presenting the technical requirements to the Managing Partner and TMT that support those processes.

It is anticipated that as the number and types of communities increase, the tools supporting and available to all the Geospatial Platform communities will expand. The analysis of requirements presented by the communities and the subsequent testing and analysis of tools to meet those requirements will be an on-going process.

Technology

The Geospatial Platform capabilities are based on shared cloud computing-based services, open source and proprietary software, and various system, Internet, and transfer protocols. The combination of utilized technology, while initially defined, will likely progress and mature over time. While the intent is for the Geospatial Platform to be as interoperable as possible, it is a component-based implementation of tools and services providing a core capability that may not be completely interoperable with all existing agency tools and services. It is the responsibility of the community managing agency(ies) to understand the supported technologies and options, communicate with the TMT on additional options, manage approved/integrated tools within the defined and approved technologies, and work with the TMT on any updates, changes, or new requirements prior to their implementation. The TMT will help community leads and contacts understand the Geospatial Platform's technical requirements.

Communications and Outreach

Communications and outreach related to a community's activities needs to be figured into the community's operations and can include tools provided as part of the Geospatial Platform's communities' framework (e.g. map gallery's, blogs, calendars). The community managers will also have the opportunity to promote high-value/visibility products to the public and to the Geospatial Platform's primary landing page. The community managers should consider the mechanisms they feel will be most effective for their communities purposes.

Communications and outreach on the Geospatial Platform itself will be supported by the TMT and managing partner. Materials that include standard messaging on the Geospatial Platform that can be utilized by the communities will be available to assist community leads in their outreach activities.

Portfolio Management for Federal Agencies

A primary driver in the stand-up of the Geospatial Platform is its use in meeting Federal geospatial asset reporting and data accessibility requirements. Federal agencies have been directed to utilize a portfolio management approach to inventory, track, and report on the federal geospatial portfolio assets in order to understand what assets are available, reduce redundant data investments, identify areas where data gaps exist, and understand data use and Federal levels of geospatial investment. The Geospatial Platform is primarily focused on the portfolio's geospatial data assets. A set of metrics will be developed, and determinations made on what data need to be collected and tracked, to effectively support the reporting and portfolio management requirements.

Federal agencies who manage geospatial data as per Office of Management and Budget Circular A-16 are responsible for meeting certain data management, access, and reporting requirements.⁵ The Geospatial Platform will support the agencies in these duties by providing communities focused on the development and management of key data themes, tools for registering, searching, and managing metadata, and dash-board style status reporting. Data registration processes are being designed to help agencies meet multiple Federal requirements through a single process (such as registering data with Data.gov and the Geospatial Platform simultaneously), and leverage existing, limited resources by creating communities focused on joint data investment planning and data acquisition as a service, and others. The Geospatial Platform will ultimately improve the understanding of Federal geospatial investments and make existing investments easier to leverage. This approach poses additional potential for collaborating with other levels of government and partners to advance the National Spatial Data Infrastructure (NSDI) as the A-16 data communities become a focal point for the development of key national geospatial data sets.

⁵ OMB Circular A-16 and its *Supplemental Guidance*: <http://www.fgdc.gov/initiatives/portfolio-management>

Summary of Roles and Responsibilities

Throughout this document, there are references to responsibilities aligned to community agency leads and the Technical Management Team (TMT). Table 1 provides a summary of the key roles supporting the operations and activities of the Geospatial Platform, its communities and groups. Table 2 provides a summary of key responsibilities divided between the community and group leads and the TMT. These tables help identify the types of personnel resources required to effectively support activities and the types of activities they will be required to fulfill.

Table 1: Key Community and Group Roles

Role	Responsibilities
Community Management Lead(s)	Community lead agency/ies designate someone to oversee the activities, information, and operation of the community and associated group(s). Help determine what content can be shared with the various user types (group, community, public). This person(s) oversees communication with the technical support team. May have a direct affiliation with an A16 Theme or Dataset custodian or lead.
Community Points of Contact(s)	Community lead agency/ies designates one or more persons who can be contacted for information and help on the community, its content, members, etc. This person(s) is a primary information conduit with the community and its users.
Group Management Lead(s)	Community lead agency/ies designate leads for the supporting groups who oversee the operations and membership of the Platform components of a community. This person(s) communicates with the technical support team and is the primary contact on webmapping activities for the community.
Community Members	Persons who have been invited to join the members only (registration and login required) resources of a community. They collaborate on the community's goals, compile and provide information, and utilize tools to meet community needs. Membership is managed by the community management lead(s).
Group Members	Persons who have been invited to join the members only (registration and login required) resources of a community's group. They work in the group to register and create services and develop map-based information products. Membership is managed by the group management lead(s)
Public	Users accessing the Geospatial Platform's public site and available resources (no registration or login required) have no specific responsibilities other than data and information best practices (e.g. sourcing information).
Community/group technical support	Provided through the managing partner and jointly funded Geospatial Line of Business/Geospatial Platform technical support contract. The TMT manages all technology aspects of the Geospatial Platform, its development and operations, under the direction of the Managing Partner.

Table 2: Geospatial Platform Community and Technology Management Responsibilities Summary

Roles	Responsibilities
Community /Group Lead Agency(ies)	<ul style="list-style-type: none"> • Identifying and maintain community and mapping group leadership roles and contacts • Actively monitor and manage the community and group sites and content • Coordination of community and group set-up with the Managing Partner • Defining the processes to be implemented through the site, e.g. create a map, submit a form • Membership management • Content management • Identification of available tools and methods of use for the community • Developing and communicating requirements with the TMT • Process, package, review, upload, manage, retain copies of, archive and otherwise provide and manage the communities data and products • Ensure consistency in communicating about the Geospatial Platform by utilizing provided materials • Interacting with the TMT on technical issues and schedules • Communicating community messages and tracking applicable metrics
Geospatial Platform Technical Management Role(s)	<ul style="list-style-type: none"> • Elevate, in a timely manner, issues requiring Geospatial Platform Oversight Body guidance • Ensure technical operations are meeting requirements • Provide help/support to community leads • Schedule development spirals for new capabilities and fixes • Notify users of planned updates, impacts, new capabilities, new processes, and potential and scheduled operational impacts • Coordinate with Data.gov, and other Federal initiatives • Align development activities with Federal policies including but not limited to: the Shared Services initiative, Open Data Policy, OMB Circular A-16 Supplemental Guidance, FISMA • Develop and provide the templates for the community pages • Develop and provide content and service registration requirements for the group pages • On-going analysis of the shared mapping tools technology/solution requirements • Ensure the technical capabilities provided by the Geospatial Platform are operating properly, being monitored for service reliability, and can support the delivery requirements of the users as deemed appropriate and necessary, including the shared cloud-hosted environment • Recommend requirements-based improvements or additions, test tools, and track requirements • Manage system security, access, and use • Report status, content, performance, use, and other metrics on a regular basis

Getting Started – Tiger Teams

To help agencies learn about the collaboration opportunities and tools provided by the Geospatial Platform and get them started in their community develop efforts, the Managing Partner plans to use a small teams of advisors to meet with prospective users. These “Tiger Teams” would consist a government and/or contractor staff with expertise in both the administrative and operational aspects of the Geospatial Platform who can meet with agencies or groups of users interested in establishing a community. The Tiger Team members will work with the group to understand their community’s mission and provide information, materials, and demos on how the Geospatial Platform can support their needs. Some of the support a Tiger Team may provide include:

- Provide outreach materials, e.g. briefings, videos, demos
- Provide menus of available services, both core services and for-a-fee services, including types of available help and support from the TMT
- Facilitate meetings with the Geospatial Platform Managing Partner or other key leadership
- Help determine uniqueness of the community and its mission and overlap with other’s
- Discuss implementation considerations, potential partners, available tools
- Provide community and group naming guidelines
- Provide community, group, and service registration requirements
- Provide information on technical processes related to services, data hosting and authoring procedures
- Provide information on agency roles and responsibilities in relation to community operations and A-16 data management
- Help with the initial analysis of the effort required for community establishment and support.

Tiger Teams are designed to help agencies and groups scope a community and understand its set-up and operational requirements. Once an agreed plan for the community’s establishment is in place, support for technical aspects of the community’s or group’s stand-up and on-going technical support will become the responsibility of the TMT.

Process for Establishing Groups and Communities

There are many facets to consider when establishing a collaborative community and supporting services on the Geospatial Platform. Based on the activities that the inaugural Hurricane Response group went through, both in their stand-up of the group on the Geospatial Platform and based on their experiences with internal platforms or similar efforts, the following is a list (non-exhaustive) of considerations and steps aligned into a general process to help agencies identify their goals and requirements.

It should be possible, and even encouraged, to start with the creation of a Group which may or may not surface in a Community organizational presence. Communities are often integrative and collaborative whereas much topical or theme-specific contributions will come through agency registration of data and service assets, and even applications to the Portal itself. Review and ‘approval’ (enabling for public visibility) can take place within an agency or a Group and may not require Community creation and maintenance. For example: an agency may have a data service they manage that they register with the Geospatial Platform to enable its broad reuse – this does not require the agency to establish a community.

Community leads should consider, to the extent possible, the intended lifecycle of the community and its content. Communities are established, mature, may adapt to changes in the community’s priorities, and might

ultimately sunset or merge with another community. These considerations may even tie into the purpose of the community.

The basic steps follow a general lifecycle process and include:

- Define the purpose of the community and the users it is intended to serve.
- Inventory and identify the data, information, and resources supporting the community.
- Establish the community and its content within the Geospatial Platform.
- Provide access to the users.
- Operate the community and maintain its content.
- Reevaluate the community's effectiveness and role and adjust accordingly.
- Archive and/or migrate old content in support of the community's purpose and goals.

Define and Evaluate Group's Purpose and Membership

This is performed by an initial group in a planning process who are knowledgeable in the policies, processes and technical requirements of the community. Communities may consider staging the release of their information, tools, or processes into manageable pieces, and should remember that within a community, there can be subgroups focused on specific activities or products. Depending on the community, establishing a charter to formalize its function and operation may be desirable.

- Business goals – Define the purpose of the community and the issue(s)/topics it is intended to address.
- Processes – Identify the processes and user interactions the site needs to support.
- Identify Potential Group/Community Members – Define the target audience(s) and their access requirements – what groups are needed and to what will they have access?
- Lead agency(s) – Identify the agency(ies) with associate leadership mandates and/or related roles.
- Develop Group/Community Management Procedures – Identify who will control/vet/be accountable for content, products, communications, and interactions with the community and the TMT.
- Terms of reference – Consider the value of establishing an official set of guidelines for the community.
- Identify Key Points of Contact – Identify the contact(s) for technical issues, general information, membership or content issues and questions.
- Services (use cases) – Identify the site's required services and the tools that will support them.
- Information – Identify who is responsible for the oversight, processes, content and operations of the community's outreach and internal and external communications mechanisms.
- Group and Community Roles – Identify the supporting staff and their back-ups.
- Public/private access – Identify who decides what information/products will be made available to whom, and through what process these decisions are made.
- Ability to track successes and progress – What metrics should be collected to show progress?
 - Identify metrics to be tracked and how and by whom they are collected.
 - Determine if there are key milestones to be reported and how to report them.
- Meet with the Geospatial Platform Managing Partner
 - Determine uniqueness of the group / overlap with other groups.
 - Discuss implementation considerations.
 - Follow group and community naming guidelines, as determined by the TMT.
 - Adhere to group, community, service registration requirements, as determined by the TMT.
 - Understand services, and data hosting and authoring standard procedures.
- Outreach/Educate Potential Members
 - Tiger teams – utilize early in the planning process.
- Convene Group Members – Who are they?
 - Get commitments to fulfill roles and responsibilities.

- Get consensus on the community's goals, issues, and approach and document them as part of the community's overview.
- Identify success factors – get input from the community on how it will know if its efforts are having their intended effect and what enables this success to become apparent.
- Establish the Community/group
 - Work with the Geospatial Platform Managing Partner/development team to determine what is specifically required to establish the online presence.
 - Compile group members and roles – working with the TMT on the initial stand-up.

Inventory Data and Business Process Needs

This is performed by community members with more technical knowledge, such as program leads, who are familiar with data and information requirements for the community, where it is available, and how it can be accessed and used.

- Data Sources – Identify the community's data and information requirements (e.g. what is needed?).
- Identify the actual available data services, service sources, webmaps and available service types (WMS, KML, etc.). Search and identify official sources (and potential community members) to fill any gaps.
- Determine the level of service management and reliability of the data sources to ensure they are reliable enough for the community's use. Consider the use of a Service Level Agreement or alternate hosting site to address service reliability issues.
- Validate that the data and service metadata, for both services being used from others and services being registered by the community, contains the appropriate level and accuracy of information.
- Evaluate “need any data now” vs. “highly validated data” requirements. Data needed during an event may need to be best available without much quality control so make sure the users are aware of the source(s).
- Establish Community – Convene the members and potential members, get support/fulfillment of roles commitments, and establish the group's management and meetings (or other management collaboration). Consider if the community would benefit from establishing smaller subgroups to address specific issues or activities.
- Community Content – Identify and locate the contextual information required by the community and its sources (i.e. what information, site links, documents, etc., are needed by the community in addition to the geospatial data?).
- Processes and Tools – Further refine the processes, process steps and tools that are needed to support the community and identify missing elements.
- Existing Templates – Compile existing (or links to existing) templates, symbology guides, forms, or other guidelines or standards pertinent to the community.
- Cost analysis – Evaluate the types and level of resources needed to support the community's efforts, and identify where cost savings are likely to occur. Can savings be affectively tracked and reported?

Obtain Services and Community Content

These elements are performed by community members knowledgeable in the technical aspects of data, websites, the Geospatial Platform, and technical processes, and utilize support from the TMT in the use of Geospatial Platform tools and capabilities. All access and management controls should be considered here.

- Establish community and group(s) – initial set-up is performed by the TMT and includes training to key community members on how to update and maintain content and identify issues the TMT needs to address.
- Data Sources – search and/or establish data services and register them with the community or group and establish access management controls.

- Information Sources – assign roles within the community to manage other (non-geospatial) information resources utilized and requiring maintenance, and integrate the information into the community templates.
- Processes and tools – implement roles for managing community processes and tools.
- Existing templates – collaboratively establish and register data/report/other templates, basemaps, etc. that can be reused in support of the site’s processes and tools.
- Other communities content – collect and establish support for maintaining content, including information from and for social media tools.
- Public/private access – establish membership lists, group managers, and the processes for managing membership, and information access to member only resources.

Provide Access to Users

Once the initial community and webmapping sites are established, the information and access need to be made available to the users. This will initially be done by a combination of the TMT and the community technical points of contact, with the long-term maintenance being the responsibility of the community leads.

- Data Sources – open and test access to approved users.
- Information Sources – open and test access to approved users.
- Process and tools – open and test access to approved users and proper process function.
- Existing templates – provide access, and directions for use.
- Community content – Open and test access to approved users.
- Public/private access – Promote approved data/information/products for public access.

Maintain Content and Community

At this point, the community moves into primarily an operations and maintenance mode. As part of the longer-term management, a cyclical process should be used to regularly evaluate the health and usefulness of the community.

- Identify the process for, and person(s) with the roles, to review content over time – keep content current and relevant.
- Identify a process for refreshing and purging membership.
- Maintain current contacts for communicating issues with the TMT, users, and managing agencies.
- Consider compartmentalizing content management for large communities (e.g. for event-based communities, where does the data go once the event is over?).
- Periodically reevaluate the community’s data and information goals and supporting requirements.

Evaluate Use to Best Meet Needs

Communities will be most effective if they meet the user’s needs, and the intent of the site (what it is intended to support) is clearly articulated to the users. Communities are about people – the users – and there should be a mechanism to gather their requirements and feedback.

- Establish points of contact and tools for user feedback.
- Regularly reassess progress/use/needs of the community.
- Incorporate feedback into community activities to let the users know they have been heard.

Archive/Migrate Old Content

Communities should evaluate their need for removing data and information from the site when it is no longer needed, have a plan that adheres to records management guidelines, and determine where the data should go.

- Monitor the amount, types, and age of information and data. Information currency is often a key to keeping users engaged.
- Consider migration of data to agency-specific sites if appropriate.
- Consider both on-going/long-term versus event-based information management requirements.

These steps are not atypical to what an agency executes when establishing an agency-specific site. It is anticipated that many of the considerations listed above will be extensions to existing agency processes.

New Technical Recommendations

During the establishment of the Hurricane Response group, one of its charges was to help identify additional features for consideration for future implementation. Recommendations included:

- Easy ways for community authors to nominate and showcase data and applications of interest, based on their prior existence in a catalog – e.g. give a star rating.
- Host a member’s-only area within a community for non-public interaction, allowing content to go public, as required.
- Support a document repository to share guidance, how-to, and key documents.
- Enable a notification service to registered members when Community content changes (broader potential exists for notifications on catalog content changes that match user interests).
- Provide a mechanism for the registration of public Points-of-Contacts for a community, but also manage a detailed contact list with name, email, phone, etc. in a members-only area.
- Provide a gallery of “featured” resources – not just webmaps.
- Provide communities with calendar tools or a “news” list of community events of interest, potentially with notifications.
- Develop a common layout for each community with a minimum set of links and tabs – this is initially part of the community pages template.

Groups in Geoplatform.gov – Managing User Access

A community can be defined as a collection of individuals who share a common topical interest or goal. In Geoplatform.gov, communities are supported through the concept of “Groups”. Groups in Geoplatform.gov define an access control mechanism for communities to collaborate and share common interest information related to geography with other group members or the public.

Groups for Different Purposes

Groups can be used to support different purposes in Geoplatform.gov. Using the Status setting, a group owner can configure what group of users has access to see the group:

- Private (not participating in a group, not flagged as Public)
- Group-Only (Logged-in group members within Geoplatform.gov can search for and find content from this group.)
- Public (Public users can search for and find this group without a login.)

For a user to be able to contribute content or join a community or group, they must have a Geoplatform.gov login.

Only users who are members of a Group can share items with the group. Membership is granted in two ways: Invitation or Application. If a group is Private, the only way for a user to join the group is by accepting an invitation directly from the group owner. For Organizational and Public groups, the group owner can configure the group to allow users to apply to join the group. Although users can apply to join such groups, the final decision on membership is controlled by the group owner reviewing and approving membership requests.

Using Groups as a Security Model for Items

Groups can also be used as a security model in addition to presenting the content to users. When a Geoplatform.gov user wants to share an item, they have choices of sharing it with Everyone (if allowed by the Geoplatform.gov Administrator account), the Geoplatform.gov Organization, and/or one or more Groups. Users can only share items with groups of which they are members.

Because an item's sharing permission settings are separate from the sharing setting for a Group, it is possible to have both public and private items shared within a public Group. To clarify how this works, consider a Public group containing many items. All users of Geoplatform.gov can find and see the group description and attempt to view the items shared in the group. However, Public (anonymous) users can only see the items in the Group that are shared with Everyone. If there are items shared to the Group that are shared with the Geoplatform.gov organization, but not Everyone, then anonymous users will not see these items – only logged-in Geoplatform.gov users. The same applies to items shared only to members of the group – even if the group is Public, only group members would be able to see these items.

Groups are one of the main features in Geoplatform.gov that support sharing of geospatial content items for communities. Groups are configurable to support different community purposes from organizing public collections of information to coordination of items among a private project team. Both public and private items can be shared in a group. This interaction between group and item sharing permissions provides a flexible and powerful mechanism for organizing community content.

Summary

The Geospatial Platform is a Federal shared service that enables Federal agencies and their governmental and non-governmental partners to collaborate on the understanding, information creation and sharing, and problem solving of key issues and events. Geoplatform.gov is an Internet-based capability providing community collaboration tools, geospatial webmapping tools, and shared cloud-based infrastructure where groups from many organizations can work together in an access-controlled site to register, search, and share data and information products. It is also the implementation tool for agencies to use to collaborate, coordinate, and report on their A-16 geospatial data management activities and meet Federal data sharing and access requirements. A joint investment of the FGDC member agencies, the Geospatial Platform is designed to improve data access and use efficiency, improve information access for mission execution and decision-making, and improve accountability for Federal geospatial investments.