A Process Framework for Developing Local Government Data Access Policies
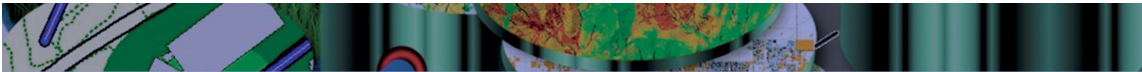
Contents

Overview

In many organizations, the GIS manager has been charged with establishing GIS data access policy for the organization without the official authority to do so and without understanding the implications associated with policy implementation. Often, the result is a policy that is not formally adopted or a policy that has been established strictly from a legal perspective.

This document serves as a process framework for developing an effective GIS data access policy. Local government GIS managers can use this framework to help decision makers understand and formulate a GIS data access policy for their entire organization. The process encourages decision makers to review options for data distribution and carefully consider how implementing a policy will impact the organization, staff, private citizens, the business community, and other government agencies.

The goal is to enlighten and inform decision makers about specific GIS data access policy decisions. The goal is not for all local governments to have the same policies, but for each organization to formulate policies using an informed and well thought-out process.

The document outlines a series of data access policy components that should be considered during policy development. Information about the components, suggested participants, and potential implications are presented for each. Readers are encouraged to utilize these components as a framework for policy development and to expand the content as needed to address the specific concerns of their organization.

To help facilitate understanding and discussion, this document is written from the perspective of a non-GIS practitioner. This is the product of a collaborative effort among members of the Geospatial Administrators Association of South Carolina (GAASC). GAASC would also like to thank ESRI for publication assistance. The following contributed to the development of this document:

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GAASC is a network of local government management professionals from both GIS and IT disciplines. Our purpose is to share knowledge, experience, and resources, as well as to collaborate on common issues, problems, and needs. Our focus is on GIS/IT business management, interagency cooperation, technology standards, member communications, and education/outreach. More information is available at www.gaa-sc.org.

Overview of Process
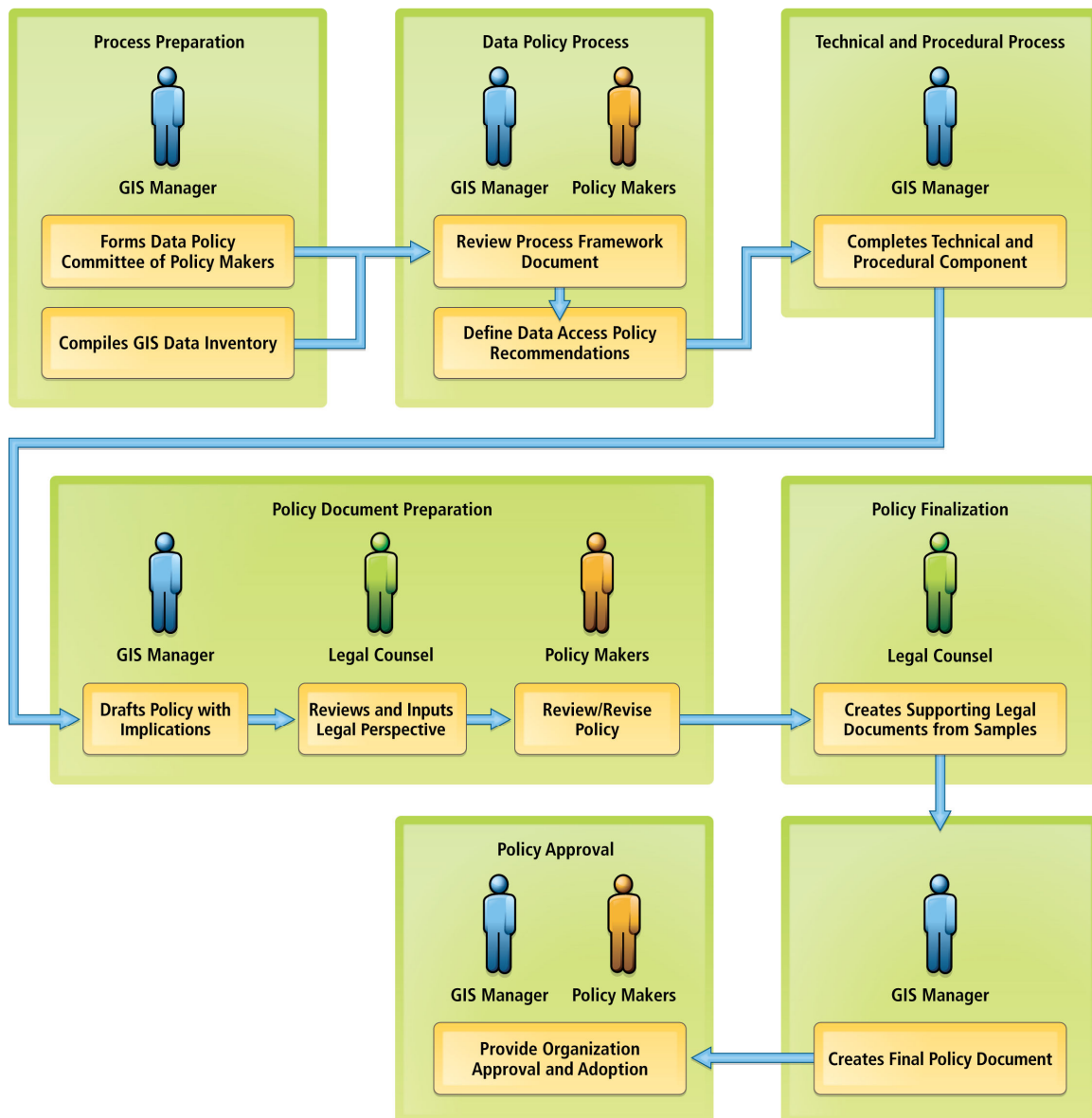
Process Summary

Process Preparation

1) The GIS Manager (or representative) forms the Data Policy Committee composed of organizationally empowered decision makers.
2) The GIS Manager conducts a data inventory in preparation for the Policy Committee meeting.

Data Policy Process

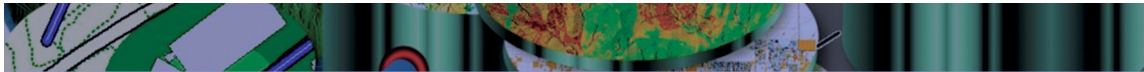3) The Policy Committee, led by the GIS Manager, walks through the Policy Component framework and guides discussion toward

   - Defining the organization's philosophy
   - Identifying critical issues
   - Determining the implications of the policy choices

Technical and Procedural Process

4) The GIS Manager addresses the Technical and Procedural Components based on knowledge of the organization's resources and capabilities. These components compliment the policy recommendations and provide the guidelines for the GIS staff to administer the policies.
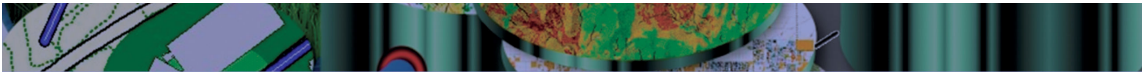
Policy Document Preparation

5) When all the components are completed, the GIS Manager drafts a policy document stating the policy and technical recommendations. For each component, a summary of the implications of the policy is prepared as well as its impact on the:

   - Data consumer, including how the data can be utilized, the methods of access to the data, and fees (if any)
   - GIS staff, including associated overhead in providing data access and anticipated additional workloads
   - Local government organization, including impact on revenue, relationships with other organizations, and public relations

6) The draft policy document is submitted to the Legal Counsel for review and further input. It is important that the organization's decision makers lead the policy development then seek legal support to ensure that operational concerns, not legal concerns, drive policy content.
7) The Policy Committee reviews the comments from the Legal Counsel and makes policy changes or revisions as needed.

Policy Finalization

8) The necessary supporting legal documents are determined (such as disclaimers and data releases) based on the position of the policy. The list and criteria for these are completed under the direction of the GIS Manager and sent to the Legal Counsel to create.
9) The GIS Manager creates a final policy document for submission to the City/County Manager and/or Councils for approval and adoption.

Process Preparation

1—Forming the Policy Committee

The Policy Committee should consist of a small but empowered group of managers who understand the driving goals and pulse of the organization, particularly at the city or county council level. A small group with a balance of policy influencers and subject matter experts (such as the GIS Manager and IT Manager) is able to work more efficiently and effectively than a larger group. It is important that you have the right people as part of this committee who can help formulate and influence the final adoption of organizational policy.

2—Preparing a GIS Data Inventory

Create a data inventory of the GIS data you have available in your system. This inventory will be reviewed by the Policy Committee to determine which layers should be available for public access. For each data layer in the inventory, indicate the ownership, risk, confidence, and value based on the following descriptions:

Ownership

For each layer in the list, indicate if you are the **original source** and owner, if the data originated from another organization but has been improved by you (**derivative**), or if the data is being used as part of a **data sharing agreement** with another organization.

Risk/Confidentiality

Next, indicate if the data is **commonly available** information (such as the location of a building, an address, or a parcel number); if outside use of the data could pose some form of **potential risk** to the organization or end user (for example, if inaccurate data could lead to costly or dangerous situations); or if the data may contain **confidential information** that is appropriate for internal use but damaging to individuals if released (including personal information such as social security numbers, business gross receipt data, or pending development plans).

The release of some datasets by nature may pose specific security risks and concerns among local governments. The Federal Geographic Data Committee (FGDC) has published a useful document titled *Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns* (http://www.fgdc.gov/policyandplanning/Access%20Guidelines.pdf). These guidelines include a decision tree that you should reference to help you identify sensitive data, if any, and the appropriate steps to take to mitigate the risk.

Confidence

Indicate your confidence in the accuracy and quality of the data: **high confidence** for data that is extensively used and routinely maintained from reliable data sources and from internal processes such as permitting; **medium confidence** for data created from the best available data sources, but infrequently used by departments or hard to verify without extensive effort; or **low confidence** for data created for a special project but not used or updated since then, or for data created from questionable data sources.

Interest

Which data consumers would be interested in access to this data? Indicate if there would be interest from the average **citizen,** from a **business** such as an engineering firm or realtor, or from a bulk data **reseller** who can resell the data or create derivative products from the data.

GIS Data Inventory				
Data Layer	**Ownership**	**Risk**	**Confidence**	**Interest**
Layer 1	Original	Common	High	Citizen
Layer 2	Derivative	Potential	Medium	Business
Layer 3	Data Sharing	Confidential	Low	Reseller

Metadata Support

The output of this data inventory could also serve as a first step for creating basic metadata for your data holdings. You will need to collect general information about the title, time period, and general content of your data holdings as part of the inventory, and you can record the recommended inventory parameters described above within the metadata. If metadata already exists for the data holdings, you can add the parameter information to the metadata records.
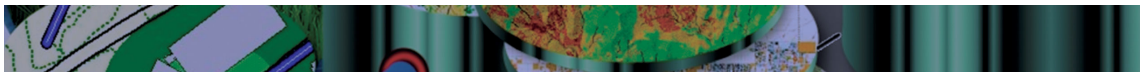
Data Policy Process

3—Defining Organizational Philosophy on Data Access

Convene the Data Policy Committee and review, discuss, and document each of the following Data Policy Components.

Policy Component—What GIS Data Should Be Publicly Available?

Overview

Will all of your data be available to the public or only select datasets? Often, an organization will identify a set of data products that it makes available. Other data resources are limited for in-house use only or may be generalized versions of its data, that is, some of the information has been removed for security or personal identity purposes.

Most organizations have multiple GIS data layers within their system that originated from a variety of means and sources. Many of these were created with original in-house efforts while others may have an origin from someone else's efforts and have been improved (value-added resources). Still other datasets may be available from a data sharing agreement with another organization and may have some restrictions on their use and redistribution. Some data layers are routinely updated as part of an existing process and result in a high confidence of data quality, while other layers are of a poorer quality and need to be used with caution.
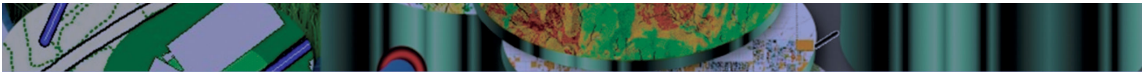
Discussion

It is important that the Policy Committee understands the characteristics of the GIS data, as this will ultimately affect the decision to make the data available for public use or to restrict its distribution. Discuss the following data characteristics and implications related to making data available outside the local government organization.

Ownership—Who has the rights to use and distribute the data?

- **Original—**The source of the data is from your organization and you are the owner. The decision to share is completely up to your organization.

- **Derivative—**The source data originated from another external organization but has been improved by you. You may have added content or improved its positional accuracy. Unless there is an agreement in place from the originating organization, you are likely free to distribute this data as you see fit. However, you may want to consider how distributing or charging for derivative data may appear and potentially impact your working relationship with the source organization. If there is a question about how the organization may feel about distributing this data, it would be best to discuss the subject with the organization.

- **Data Sharing—**The data is made available to you from another organization under a data sharing agreement. Typically this will mean that you are not free to distribute the data to others.
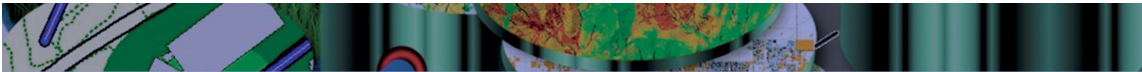
Risk/Confidentiality—Are there any risks with sharing the data or issues of confidentiality that need to be considered?

- **Common**—The type and nature of this data is commonly known or available, such as the location of a building, a street, or an address. The data poses no risk to the organization or the public, and there are no obvious issues of confidentiality with its release outside the organization.

- **Potential**—The use of this data outside the organization could pose some form of potential risk to the organization or end user. This risk could come in various forms. For example, it is risky to provide data that is hard to maintain and that can lead to a costly incorrect conclusion. In this case, publishing or providing outdated zoning information could lead to a person purchasing a piece of property for a specific purpose that does not correspond to the actual zoning allowance. As you consider the nature and potential unrestricted use of the data, it may become obvious that there are associated risks. You can overcome these risks by requiring the data to be obtained directly from a staff member, where the opportunity to provide a warning or description of appropriateness is provided, or simply by including pertinent information in the metadata (such as the date the data was last updated, details on the frequency of change and updates, and a statement that the data development organization is not providing any warranty as to use).

- **Confidential**—The nature and content of some data sources present a degree of confidentiality that requires the data to be restricted from outside distribution. The data may be available internally to select individuals who understand the appropriate use of the data and that the data can be damaging to individuals if released. Confidential data may contain personal information such as social security numbers, business gross receipt data, or representations of pending development plans.

Confidence—What is your confidence in the accuracy and quality of the GIS data?

- **High**—Although no data is completely free of error, data that is routinely used and depended on to support local government business tends to be more accurate, since errors surface and are corrected due to use. Some data originates as part of a process in the organization that produces a higher quality of data accuracy. Typical examples of this data include parcels, addresses, and streets.

- **Medium**—Deciding between high and medium data confidence is strictly a judgment call on the part of the administrator. Factors that may affect data confidence include source data that is somewhat questionable, infrequently used or maintained data, or data that is hard to collect and verify.

- **Low—**Low data confidence applies to GIS data that exists because of a one-time project with no further use or updates or GIS data from a questionable data source. This data may still serve a purpose if it is the best available. Often, these layers still exist because of the amount of time that went into their creation, and it may be a good starting source to create a higher accuracy product. Low data confidence does not mean the data is worthless, but it should be used with caution and you should communicate the associated problems to the end user.

External Interest—What importance or value does access to this data have to the potential data consumer? Who might be interested in having access? This does not reflect a need to charge for the data but rather indicates the importance of providing public access and use.

- **Citizen—**Although the average citizen may not have specific GIS software, access to this data in one form or another has definite value to the general public. Access to the data may be direct, such as through popular Internet mapping capabilities such as Google Maps or Microsoft's Bing Maps. With the popularity of Global Positioning System (GPS)-based navigation capabilities such as TomTom and Garmin, the accuracy of local data is very important to finding the correct destination and route. Most of these commercial applications rely on one of two primary data providers (NAVTEQ or Tele Atlas). In this case, providing the data to commercial entities may be the most effective way to serve your citizens. These data providers depend on access to high-quality local street- and address-based data to incorporate into their nationwide map sets. An indirect benefit to the average citizen may come in the form of how this data supports the delivery and reduced cost of services provided by the private sector.

- **Local Business—**This category includes data that benefits local businesses using specific GIS or CAD software to produce products and services. Engineering firms typically rely on local data on streets, utilities, and elevation contours for preliminary design functions. If this data is not available locally, the client will typically bear the cost of field collecting this data, which may significantly increase the product cost. Other examples of local business data users include organizations involved in planning, marketing, real estate, and mapmaking.

- **Data Reseller—**Some companies have built their business on acquiring data sources from government and reselling this data back to the public. These companies may add value to the data by processing the data, merging data from multiple counties and/or state organizations, or creating some other derivative product. This is typical where tax map books are created from data obtained from the tax office. NAVTEQ and Tele Atlas are also examples of data resellers.

Component Output

Review the Data Inventory characteristics layer by layer. Taking into consideration each of the factors of ownership, risk/confidence, and value, develop a list of

- Data layers that should be publicly available
- Data layers that should be restricted from outside access and use and the reason for the restriction

Policy Component—How Data Might be Used and Under What Conditions?

Overview

Once a list of publicly available data is determined, identify the potential data uses for each dataset and the conditions under which it can be used. However, if you determined that all publicly available data has equal access with unrestricted use, then this component step is unnecessary.

Discussion

This component is a very important step in formulating the local government access policy. By having an effective dialog with the policy makers and exploring the possibilities of how and where the data might be used, you can better produce a product that fits the political climate and wishes of your organization. Ultimately, the end result is justifying the recommended policy position and how the shareholder (local taxpayer) will ultimately benefit from making the data available. Typically, most local government organizations are perceived as only thinking in terms of revenue potential for GIS data access. In this section, you should think outside such constrained parameters when determining the conditions by which the data can be utilized for outside interests. You should creatively explore cooperative arrangements with the data consumer, which are sometimes more valuable to the taxpayer than revenue. For example, you could require that data consumers report errors or omissions in exchange for data, access to derivative data products, free organizational software license or subscription use, or a set amount of hard-copy products.
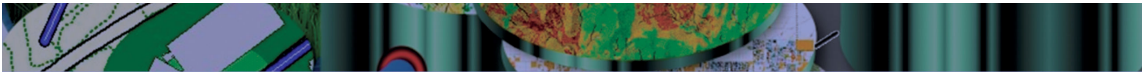
For each use category listed below, examples of conditions for access are provided to assist in discussing and exploring cooperative possibilities. Although most variations occur along the lines of fee structures, other possibilities should be considered that will bring benefit back to the local government.

Make a list of how you anticipate local government GIS data will be used, and discuss the conditions or limitations that may be placed on its use. The following list is provided as an example of categorizing different types of use. These categories are not intended to be restrictive or exclusive to the discussion.

Community Information—Citizens may desire information for their own use but typically not for a business-related need. These requests may fall in line with the (FOIA) requests where citizens are interested in knowing something about the neighborhood where they live or to support community group activities.

Example conditions for community access may be unrestricted private use with minimal or no fee.

Internal Business Operations Support—A business providing services locally may want access to GIS data to support its operations/planning. Access to this data may be seen as part of the benefits of being a taxpayer directly supporting the activities of the local government. This should be differentiated from data redistribution.

Example conditions for local business use may be (1) free with unrestricted use to support the core business needs or (2) reduced fee.

Client Business Products—Business consumers may use GIS data to support their own efforts to create a client product or service. For example, a local engineering company may want to use the GIS base data as a reference for its proposed development plans within the city or county. The use of your data may reduce its data collection costs for preliminary design as well as help improve the end product by utilizing trusted information.

Example conditions for data user use may be (1) free data in exchange for returned site project data in digital format for basemap updating or (2) free data for design of city-funded projects.

Bulk Data Resale—Some companies obtain trusted information from government organizations and sell it to the public. These companies often assemble data from a variety of sources, consolidate it into a unified database system, and output printed or online products to the paying public. Traditionally, the use of tabular data such as tax records or court documents has been the emphasis. With the recent growth of GIS within the business community, access to trusted local government GIS data has caught the attention of many of these type of companies for potential profit.

Example conditions for private data redistributor use may be (1) no access for redistribution (2) use by licensing fee and agreement or (3) free.

Public Internet Mapping—Countrywide and even worldwide Internet mapping capabilities rely on access to a seamless data layer of GIS data such as streets, addresses, and points of interest. Two of the major companies providing the base layer data for capabilities such as Google Maps and Bing Maps are Tele Atlas and NAVTEQ. This category of user is separated from private data redistributors due to a number of factors. First, typically the actual end user (citizen, visitor, or business) is not charged for use of the application. Second, there appears to be an element of public benefit for access to this type of capability. Due to the widespread access and use of this information, it seems in the best interest of a local government to help facilitate the utilization of its good local data into the application. Having the public use good and accurate data benefits the quality of activities occurring within jurisdictional boundaries and benefits the local government agency in turn.

Example conditions for public data provider use may be (1) free with proper source credit or (2) free in exchange for free software or product license (such as Google Maps Professional or a Bing Maps site license).

Map Sales—City and county street maps are routinely printed and distributed by map publishing companies at local gas stations and visitor bureaus. Some maps are sold while others are free to the public and supported by advertising. As with public data provider use, map sales provides an evident benefit back to the local government and citizens by ensuring that these maps are accurate through the use of local data sources.

Example conditions for map publishing company use may be (1) free with adequate statement of data source credit (2) free with a minimum number of finished products (maps) available for internal government use or (3) available for a reduced fee.

Supporting Data—Other organizations may be supporting your internal data efforts or creating and sharing GIS type information with your organization under some form of a data sharing agreement. This is a reciprocal arrangement between organizations and may support your GIS efforts through in-kind services and products, which may influence your decision not to charge them for access to your data.

Example conditions for data sharing use may be (1) reduced fee in exchange for data or services (2) credited source (3) reciprocal data products or (4) no third-party distribution.

Component Output
Make a list of the different types of uses and the conditions by which each can be utilized, including whether the data can be redistributed to others, whether credit is required, and whether a fee is required.

Policy Component—What Do We Charge for the Use of the Data?

Overview
The primary issue that plagues most local government GIS operations is charging fees for data. First, it is necessary to determine if fees can or should be charged. If fees are justified, there are additional challenges in developing a logical pricing scheme and determining the true cost of operating and maintaining a fee calculation and collection program.
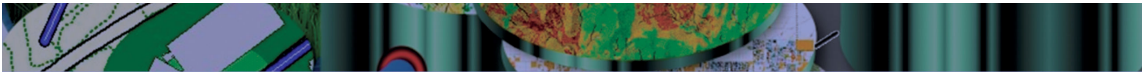
Discussion

Should Fees Be Charged?
If the bulk of the benefit for using the data will ultimately reside with the citizens—such as through better decisions made regarding development in their community, or more accurate data in tourists' GPS devices—then is adding a charge or other hurdle worth curtailing the benefit of greater use and access to the data? Most organizations that are interested in data for a particular county or municipality intend to do something that can positively impact that community, whether on a small or large scale. Examples include tourism, economic development, corporate site selection, and engineering projects. Large impact projects such as corporate site selection often consider multiple counties or states for potential development sites, and selection of initial candidates is often done with commercially available data—not by contacting every county in a region. Local government organizations are often contacted much later in the process, so making data as widely available as possible with the least number of barriers can have the greatest positive impact for a community.

Another consideration in regard to charging fees is the anticipated amount of revenue to be made. Is there enough demand, and can enough be charged for the data, to make the entire process worthwhile? There are definite costs associated with tracking purchases, billing customers, and using valuable staff time to accomplish this. Are the GIS personnel the ones required to handle the billing and tracking?

Does that take away from their core functions and responsibilities? Is the revenue generated going directly back into the GIS Department for the generation of additional data products, or is it placed into the general fund where it is not accessible to the GIS Department? Do these hassles outweigh the potential benefit of bringing in some revenue? The answer may very well depend on the county or municipality, how heavily populated it is, and how quickly it is growing.

Also consider the original purpose of the data creation. When the project was started, the data was probably not created for revenue-generating purposes. So is revenue generation a residual benefit of data creation? Is it mandatory for data maintenance purposes? Or is the fee charged chiefly for data reproduction costs? This can cut down on frivolous data requests.

One important aspect to consider during the legal review of the policy is any applicable law on open government. Is the organization bound by an open records act or sunshine clause? How does the legal department view FOIA requests? Is GIS data handled in the same way as data by other departments? Since taxpayer dollars were used to generate the data, does charging a fee above the cost of reproduction violate or negatively impact aspects of any such open records or sunshine clause? On the other hand, is there some other means by which a citizen's inquiries can be satisfied, such as through the use of a Web-based mapping application? If so, does this fulfill or meet all aspects of the law?

Fee Calculation Methodology
As a public entity exploring the position of charging for access to data, the first item to consider is what methodology is used for calculating a usage fee. No matter what direction is taken, it is important that some form of logic apply to determining the fees. Defining the methodology will help you consistently apply fees to different uses.

Some fairly common fee calculation methods include the following:

- **Distribution—**Fees are limited to the actual costs of reproducing and distributing the data. This methodology usually results in the lowest fees for an end user. The purpose of charging fees tends to be a type of "nuisance" fee to keep frivolous requests from placing demand on the staff to fulfill data requests. Pricing is usually set as a strong value for someone who legitimately needs the data but high enough that they only request the data if it is actually needed. Distribution fees may be calculated by averaging staff time needed to process the request as well as distribution media and even computer processing time.

- **Data—**Fees are intended to recover the organizations expenses in collecting and developing the data. This methodology takes the approach that the original cost to capture the data is a normal part of the business of government, but the cost to maintain the value of the data is subsidized or recovered by maintenance fees. If the data is not maintained, then the value to the end user is significantly diminished and eventually requires the data to be recaptured again in another lump sum project cost. This methodology produces reasonable end user costs and produces a good "partnership" between the data user and government by maintaining the commercial value of the data at lower cost than

recapture. Costs may be calculated by determining total staff effort for maintenance activities and may also consider what portion ought to be borne by the developing organization versus each outside data user.

- **Program—**Fees are intended to address the past and/or future costs of data update and maintenance. This methodology takes the approach of the end user completely covering or subsidizing a major portion of the entire initial data collection costs and additional maintenance costs in organizations that maintain their GIS data. This places the burden of cost primarily on the user community with the end result being significant data user fees. Pricing may require an initial access fee and offer a periodic update at a reduced fee when data is routinely maintained.

It is important to note that while increasing the cost to the data user may seem attractive (especially in challenging economic times), it can also significantly reduce use by outside organizations that have the potential to positively impact a community (for example, for economic development or by Google Maps). Citizens become upset when they see a map (on Google, Microsoft, or their GPS device) but do not see their home.

Another scenario to consider is that of engineering firms bidding on a project. Large engineering firms may buy the data to put together a better proposal for an engineering or construction project, while a smaller (potentially local) firm may not be able to afford buying data to help develop a proposal for a potential project. This inadvertently benefits larger companies and may also be taking some business out of the area.

Fee Structure
After deciding the basis by which fees will be established, determine the unit structure by which the fees are priced. Typical structures include

- **Price by Tile—**Typically, most GIS base layers are captured from aerial photography flown by an established uniform grid covering the city or county. Each of these individual grids may be the units that are used to collect the base layers contained within. The data within these grid cells are commonly referred to as tiles. Some organizations price their data by the tile, which means that the entire base layer data contained within that geographic tile boundary is provided at a single flat fee. If the end user's area of interest happens to fall across multiple tile boundaries (and they typically do), then the user would be required to purchase multiple tiles to obtain data for the project. Although this is not specifically a user-friendly approach, it simplifies distribution for most organizations because they probably received their data from the data collection vendor in this format.

- **Price by Layer—**With this approach, the entire geographic area of the jurisdiction is provided but only for an individual layer. For example, if road centerlines are needed, the user would receive all of them within the city or county in one single file and would pay one fee for that specific layer. If users also needed the parcels,
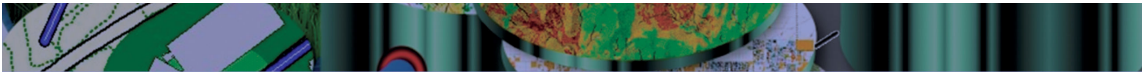
then they would have to purchase all the parcels as a separate file. Different prices can be established for the different types of layers based on the volume of features, content, maintenance overhead, or perceived value. This approach assures that users will get the areas they need for their project and only purchase the actual layers that they need. This typically does not create additional overhead on staff even if the original base data was received by the vendor in a tile format; most GIS departments will have their data joined across tile boundaries by individual layers.
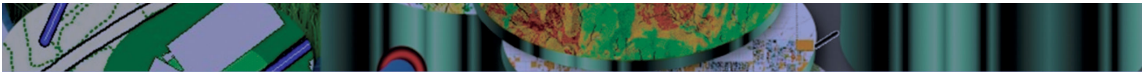
- **Area of Interest**—This allows the end user to define the specific geographic boundary of the area for which GIS data is needed as well as the individual layers within the area. This approach may be the most cost effective and convenient for the end user. However, unless the process can be automated into a self-serve application, it typically requires more staff involvement in communication and processing the data, which may ultimately drive up the cost of providing the data via this method. Establishing a pricing structure is also trickier in that it would need to be calculated on the fly since the actual layers and area could not be predetermined at the time of establishing the structure fees. Pricing could be based on a flat request fee, with additional rates per layer multiplied by some area unit such as acre or square mile, or by calculating staff time, computer time, and materials.

- **Subscription Fee with Periodic Updates**—This approach may be an additional option to one of those above and allows the end user to access all or specific base layer data for a single subscription fee. Included in this pricing is access to routine data layer updates. The subscription fee is a good option for those users who are continually requesting data for projects. Examples of these type of users may be local engineering firms and realtors. Pricing may be established on a yearly basis or an initial fee for the first delivery with updates provided routinely or as requested for a reduced cost.

Fee Exemptions

Consider establishing exemptions where the data is being used for the public good or providing data as a perk to those already financially supporting local government. Some typical groups that may be exempt from paying fees could include

- **Data Sharing/Partners**—The government may have an agreement with another organization to use its data for the local government's benefit, or the government may partner with another organization to collect and maintain data. The benefits may be shared among partnering organizations through multiple aspects, which may include QA/QC of the data (such as returning a list of ungeocoded addresses to the organization providing the street centerline). Other benefits may include making the data available to organizations making decisions regarding the community, such as federal or state agencies making decisions during a state of emergency or crisis.
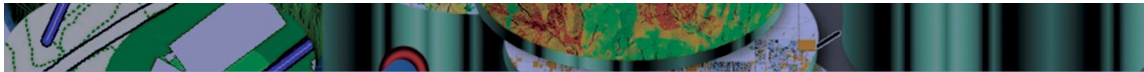
- **Nonprofits—**Organizations using the information for the public good, typically in support of community programs, may receive fee exemptions.

- **Current Contractor—**Where the local government is already contracting for an outside service, free access to the data may be granted where the data is needed for the specific project. Typically, the data would be provided only for the specific project area of interest. This arrangement may be established as part of the contractual arrangement and should ensure that the vendor is not charging back the cost of data collection for information you have provided them free of charge.

- **Residents/Taxpayers—**Residents may receive fee exemptions where the business of data collection and maintenance is already supported by their taxes.

Payment Method and Process

One procedural item that needs to be addressed is how the request will be processed and the method of payment. Indicate if the requests can be made by phone or e-mail, and if the data will be processed before or after payment is received (to eliminate no-shows). At the time of delivery, payment may be required to be made or to bill for the data, which increases the risk that payment may not be received since the cost of collecting may be greater than the actual cost for the data. Creating an internal workflow to document the process between the GIS and Finance departments will be helpful. When determining the payment process, the overhead cost of operation should be considered. Often the internal cost of processing may exceed the actual revenue generated from billing and collections.

Technical and Procedural Process

4—Defining Technical and Procedural Aspects of Data Access

This section of the policy will be addressed by the GIS Manager and technical staff. Policy staff will likely have little interest in the technical details.

A variety of technical and procedural options need to be considered before you decide how the data will be distributed to the end user. Some of these issues will be determined based on the organization's staff resources, technical capabilities, and budget constraints. The technical component discusses the format of the data when it is distributed, the availability of the data when collection projects are in progress, and the actual method by which the data user can request and access the data.

How you address these items will influence the public's view of your organization. They might see you as technically savvy, development oriented, citizen friendly, accommodating, or hard to do business with.

One of the biggest considerations in data distribution is the impact that processing these data requests will have on existing GIS staff. Once the data is made available publicly, will the staff be inundated with frivolous requests that put a burden on scarce resources? How accommodating should one be in preparing and serving the data to the end user, and how much burden/cost should be placed back on those who are making the request?

The following section will be specific to each organization. Not all the items presented may be relevant, but they are provided to help you consider possible guidelines and configurations.

Technical Component—In What Format is the Data Distributed?

Data Format—In what format will the data be provided to the end user? Will digital data be provided in only one standard format, or will you provide multiple options such as personal geodatabase, shapefile, export file (.E00), and/or DXF?

Procedure Component—How Is the Data Accessed?

Method of Access—Address how the end user will gain access to the data. Some possibilities and issues include

- **Self-Service Application**—A self-service application will reduce your staff overhead in processing requests but require a higher level of technical sophistication. This application could allow the user to define the project area of interest and specify which layers are needed.

- **Direct Download from Web Site—**This might simply be access to a zipped shapefile of common data layers available from a link on the organizations Web site. A best practice would be to incorporate a disclaimer page for the data before allowing the user to download.
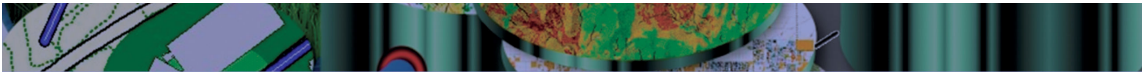
- **Online View Only**—You can provide an online viewer to the data that allows end users to query and print small-format maps but does not allow them to download the data. This approach allows equal access to all levels of users for a variety of purposes, provides access to only the most current data, and reduces the chance of the data being sold or redistributed. This may be a good option to offer the public where data access fees may be viewed as high and restrictive to the average user. Note that although this is a good option, if it is the only option, then users do not have the ability to incorporate the data into their own project, analysis, or map creation, thereby greatly limiting the use/benefit of the data and the power of the GIS.

- **By Request**—The data user may request the specific data needed including the area and layers desired. This request may be available through an online data request form, by phone or e-mail, or in person. To make these options easily accessible to the public, you should provide detailed information about these requests, including contact numbers, locations where requests can be made, and hours of operation.

Procedure Component—Best Practices

Certain responsibilities should be expected of the user and the providing organization. The following lists some best practices that may be expected as part of a comprehensive data access policy.

- **Acknowledgement of Data Provider**—Any data source (such as hard-copy maps) that contributed to your data layers should be credited to the originating organization. In some cases, the originating organization will provide the exact wording to be used. However, on projects covering large geographic areas (many counties or states), relying on multiple data sources or using data acquired from a commercial vendor may not allow you to acknowledge all data providers.

- **Source Data Credit Wording**—In the case where end users are required to cite the data source used in products, you may want to create a standard wording that they can use for this purpose.

- **Limits to Third-Party Redistribution**—Data obtained from one organization should not be redistributed to another organization for its use. Requests for data should always be directed back to the provider organization. This helps assure that appropriate fees (if any) are being paid, adequate liability and disclaimers are communicated, and the latest version of the data is being utilized. Possible exceptions to this include merging data for use by higher levels of government (such as state or federal) or in emergency response situations where each organization cannot be readily contacted and/or there is not enough time to reprocess and merge all the data.

- **Reciprocation of Derivative Data**—In cases where you obtain source data to add value to it (for example, by collecting or verifying additional data), the provider may require or request a copy of the derivative data. This expectation should be specifically requested as part of the original data release agreement. It may be beneficial to include an exception for restricted or sensitive data layers by adding language such as "where possible, or where not prohibited by law."

- **Restrict Use of Non-survey Data for Survey Applications**—The use of mapping-grade GIS data for survey-type applications should be restricted by the consumer organization and communicated internally. This can be accomplished by stating the data is a representation only and is not a legal document.

- **Timeliness of Response to Public Data Requests**—Requests for data should be responded to in a timely manner to assure good public relations.

- **Timeliness of Data Updates**—Data should be maintained in a timely manner. Where possible, standards should be established and communicated to the user community. One attribute of the data inventory should include which data layers are maintained and how often they are updated. The metadata can also include the date the data was produced, how timely the data is, and how quickly it can change.

- **Data Documentation (Metadata)**—A minimum set of metadata should be created according to an industry-standard format (such as FGDC). This metadata should be packaged with the dataset when possible or made readily available to the consumer as a separate file or online resource. Metadata supports data distribution by providing critical consumer information. The more robust the data documentation, the fewer inquiries will be made by the public. This is an opportunity to reduce overhead on the GIS technical staff by answering questions about data content and quality within the metadata itself.

- **Data Sharing Agreement**—A formal data sharing agreement may be established between agencies utilizing each other's data. This agreement spells out the conditions by which the data can and cannot be used and can protect both agencies from misappropriate use of the data.

- **Data Release Agreement**—The distribution of digital GIS data should include a data release agreement. The content of the agreement spells out the nature of the data, the expectations for timeliness, general restrictions on use or redistribution, and release of liability statements. The agreement may be a hard copy signed at the time of data release with a copy kept on file.

- **Data Distribution Letter—**A data distribution letter is a letter or e-mail with an intended statement of use written by the organization providing the data. It can be as simple as stating the following: The data is for use by the receiving party; it is not allowed to be sold in whole or in part; the data is merely a representation and is not considered to be a legal document; and the providing organization is giving no warranty expressed or implied.

- **Data Disclaimer Statement—**This statement should be created by Legal Counsel and contains release of liability for use of the data. This may be included as part of the data release agreement or, in the case of an online distribution, a "check to proceed" process before downloading.
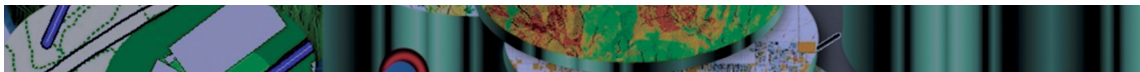
Policy Document Preparation

5—Policy Recommendations Draft Document

From the component process documentation, prepare a draft policy addressing each of the following items. Note that not all information contained in the component process will end up in the final policy.

i. **Who Has Access to the Data?**

- Summary of what the data can be used for and under what conditions

ii. **What Data Is Accessible?**

- Summary of how publicly available data was determined
- Publicly available data inventory attached

iii. **What Are the Fees?**

- Statement of fee calculation method
- Exemptions
- Fee schedule attached

iv. **How Is the Data Accessible?**

- Data format
- Distribution and access methods

v. **Responsibilities (glean relevant best practices for formal policy)**

- Consumer
- Provider

6—Legal Counsel Review and Input

Submit the draft document to the Legal Counsel for review and further input. It is important that the organization's decision makers drive the policy position within the legal parameters rather than the Legal Counsel forming the policy. In other words, the Legal Counsel should only support the organization's position, not define it. The legal department should only be involved after all of the above work and documentation has been developed.

7—Policy Committee Review

The Policy Committee meets to review the comments from the Legal Counsel and to make policy changes or revisions as needed.
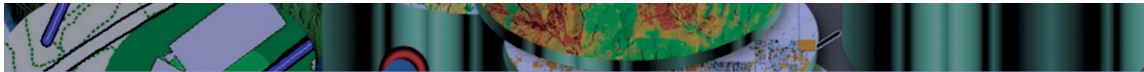
Policy Finalization

8—Supporting Legal Documents

The necessary supporting legal documents are determined (such as disclaimers and data releases) based on the position of the policy. The list and criteria for these are sent to the Legal Counsel to create.

9—Policy Approval and Adoption

Under the direction of the GIS Manager, a final policy document is submitted to the city/county manager and/or councils for approval and adoption.

Sample Attachments

Below you will find some sample disclaimer statements from various organizations. In adapting these samples to your organization it will be important to determine (with the help of legal counsel) if there is any language that may prove to be limiting for a particular type of user to work with your data. For example, in South Carolina state government, it is not permissible to sign any document that has an indemnification clause because the state is self-insured. Other states, municipalities, counties, or private entities may also have other restrictions from signing documents with particular language or phrasing.

Sample Disclaimer Statements

From Beaufort County, South Carolina
The information contained on this Web site is made available to the public as a service of the Beaufort County GIS Department. This data is intended for general reference purposes only. Although the Beaufort County GIS Department strives to maintain/obtain the most accurate data possible, some errors and inconsistencies may still exist within the maps and data contained on this site. Therefore, Beaufort County makes this service, as well as all the data and information pertaining to this service, available to the public AS IS WITHOUT WARRANTY OF ANY KIND. It is the responsibility of the users of this data to contact the necessary public entity for verification of the information obtained from this site.

From City of Greenville, South Carolina
This map is prepared and may be sold by the City of Greenville, which is a political subdivision and not a merchant ordinarily dealing in goods of this kind. While reasonable efforts have been taken to establish the accuracy of the map and the data it reflects, the City of Greenville expressly disclaims responsibility for damages or liability that may arise from the use of this map. Copyright: the City of Greenville, Greenville, SC. October 15, 2003.

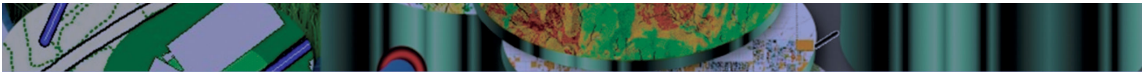**From Florence County, South Carolina**
Map disclaimer
This data is for reference only and may not have been prepared for, or be suitable for, legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Florence County will not be held liable for any damages caused by the use of this data.

Web disclaimer
The geographic information system (GIS) information on this site is made available as a service to the public. While the GIS data on this site has been tested for accuracy and is believed to be accurate, Florence County disclaims any and all responsibility for the accuracy, correctness, or completeness of this data. GIS data in general is always subject to change, and the data contained on the Florence County GIS Web site also is subject to change. Florence County provides this data and information AS IS without guarantee or warranty of any kind, whether expressed or implied, as to the information's accuracy or completeness. Digital data layers created and used within these Web services are mere representations, NOT actual surveyed boundaries. Florence County copyrights maps and digital data and restricts its use

outside of this controlled Web service environment. Data downloaded or distributed is restricted. With knowledge of the foregoing, by proceeding to use the Florence County GIS Web site, each visitor to the Web site agrees to waive, release, and indemnify Florence County and its employees as to any and all claims, actions, or causes of action for damage to property or injury to persons arising from the use or inability to use the Florence County GIS.
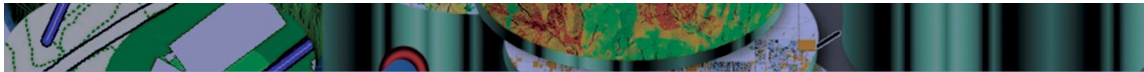
From City of Austin, Texas

Maps and GIS data produced by the City of Austin Transportation, Planning and Sustainability Department (TPSD, formerly Planning Environmental and Conservation Services Department) are for the sole purpose of aiding regional planning decisions and are not warranted for any other use. They are not warranted for small area studies or determinations. No warranty is made by the City of Austin regarding map and data accuracy or completeness.

From City of Asheville, North Carolina

The City of Asheville acquires, develops, maintains, and uses GIS data in support of its internal business functions and the public services it provides. The GIS data that City of Asheville distributes and to which it provides access may not be suitable for other purposes or uses. All GIS datasets are provided "as is" with no warranty. It is your responsibility to verify any information derived from the GIS data before making any decisions or taking any actions based on the information. Use of all GIS data and map services provided by the City of Asheville is covered by this disclaimer.

Sample Data Release Agreements

From City of Greenville, South Carolina

I, _____, of _____, for and in consideration of the City of Greenville's distribution of the following digital map data: _____, hereby fully and forever release, quit, and discharge the City of Greenville and any of its agents or employees from any and all actions, claims, and demands of whatsoever kind or nature on account of any and all known injuries, losses, and damages arising directly or indirectly from the digital map data provided by the City, now and in the future.

I FURTHER DECLARE and understand that the digital map data provided to me may not be distributed or sold in part, or in its entirety, for use by another third party.

I FURTHER DECLARE and understand that all floodplain data is derived from graphic interpretations performed by the City of Greenville GIS Division.

I FURTHER DECLARE and represent that the digital map data provided to me will be used for the following purposes: _____

I FURTHER STATE that this Release Agreement is freely and voluntarily given and I have carefully read the foregoing release and know the contents thereof and that I sign it as my own free act.

From City of Cambridge, Massachusetts

1. The City of Cambridge provides geographic information systems (GIS) data in good faith. The City makes no warranty in regard to the data whatsoever, including, but not limited to, a warranty of the accuracy of the data. The party requesting the data (hereafter "Requester") agrees that the City has no liability arising from any incomplete, incorrect, inaccurate, or misleading data provided.

2. The City makes no warranties of fitness or merchantability either express or implied in regard to the data provided to the Requester hereunder. The data provided is provided "as is" and with all faults.

3. The Requester will have no claims to data updates.

4. The Requester shall indemnify and hold harmless the City and its officers, employees, and agents from and against all losses, claims, demands, actions, payments, costs, suits, liabilities, including attorneys fees, expenses and damages (direct or consequential) whether or not caused by the negligence of the City, its officers, employees or agents, which are incurred by or recovered against the City for any reason whatsoever arising out of or relating to this Agreement, or the data, or to any use to which the Requester might put the data.

From City of Walla Walla, Washington

At your request, the City of Walla Walla is providing digital files or hard-copy maps extracted from its geographic information system (GIS) for a set fee, reproduction cost, or other agreed to quid pro quo agreement established in advance of work performed.
By accepting and utilizing these maps or digital files, you agree and accept all of the following terms and conditions applicable to this release:

A. Data extracted for survey and/or design purposes must adhere to the Coordinate System, Datum, and Electronic CAD Submittal Policies set forth by the City of Walla Walla.

B. This information is provided without warranty or guarantee of any kind, implied or express. The City does not accept any liability for the accuracy, precision, or completeness of the enclosed map or digital information or any inferences made therefrom.

C. This information is not to be relied upon for site-specific utility, land-use, or site development plans.

D. This information is provided to the party indicated on this form and is not to be transferred to a third party, without prior approval and acceptance by the City of Walla Walla GIS.

E. You accept full responsibility for any use or modification of this information by yourself or anyone who acquires it from you.

F. You agree to indemnify and hold harmless the City of Walla Walla from any claims arising from any and all uses of this information or modified versions of this information without limitation, including attorneys fees arising out of or related to the use of maps or electronic media.

G. If this digital information is shared with or used by agents or subcontractors of the authorized recipient, you agree to communicate the terms of this agreement, and you agree to be responsible for their use of the information.

H. You agree to pay the quoted fee to cover cost of reproducing required maps and data.
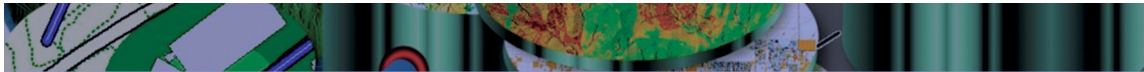
These conditions are in effect upon your acceptance, use, or transmittal of the attached map(s) or digital media. If you are not willing or able to adhere to these terms and conditions, please return the media to the City of Walla Walla without loading or using the information.

From Clay County, Minnesota
The GIS material is made available as a public service. Maps and data are to be used for reference purposes only and Clay County, Minnesota, is not responsible for any inaccuracies herein contained. No responsibility is assumed for damages or other liabilities due to the accuracy, availability, use, or misuse of the information herein provided. GIS information is in the public domain and may be copied without permission; citation of the source is appreciated.

The information contained on the cadastral maps is used to locate, identify, and inventory parcels of land in Clay County for reference purposes only and is NOT to be construed or used as a "legal description." Map information is believed to be accurate but accuracy is not guaranteed. Any errors or omissions should be reported to Clay County GIS Department. In no event will Clay County be liable for any damages, including loss of data, lost profits, business interruption, loss of business information, or other pecuniary loss, that might arise from the use of maps or the information they contain.

Sample Data Sharing Agreement

From Greenville County Geographic Information Alliance, South Carolina

Data Sharing Agreement

THIS AGREEMENT made this _____ day of _____ by and between the undersigned Public Utilities and local Government Agencies (collectively, the "Agencies"):

Background and Findings:

Agencies within Greenville County create and maintain valuable digital spatial data. This data has numerous benefits and will assist in future development of accurate geographic information system (GIS) data for the Greenville County region.

It will be beneficial to the Agencies to mutually and cooperatively share their proprietary GIS digital data. The sharing of GIS data will result in a more comprehensive, compatible, robust, utility facility management database for the permitted uses under this agreement.
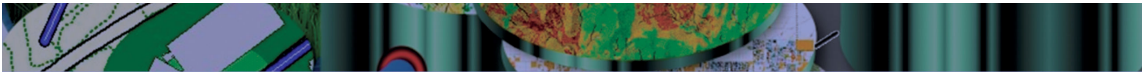
The Agreement

For and in consideration of the premises and other good and valuable consideration and subject to the terms and conditions set forth herein, the Agencies agree as follows:

1.   The Agencies shall mutually and cooperatively share their GIS digital data with the undersigned parties to this agreement. This GIS digital data shall include, but is not limited to, utility locations, transportation features, hydrology features, political boundaries, topography, and other similar information as provided herein. GIS digital data considered by an Agency in its own discretion to be of a sensitive or confidential nature shall not be a part of this Agreement.

2.   The Agencies agree that the release of digital data covered under this agreement will occur only with mutual consent and approval of the agency. No party to this Agreement shall permit the use, release, and demonstration of the consolidated digital GIS data covered under this Agreement by any vendor, subcontractor, or agency.

Further, there will be no third-party distribution of digital files received from participating Agencies. Digital files may be shared within the departments of an Agency. Third-party requests for digital data created by participating Agencies shall be directed to the appropriate individual Agency.

Distribution of hard-copy mapping data (printed/plotted maps, blue-line copies of maps) from any Agency shall be permitted by this Agreement provided that the data is copied as a necessary part of the overall map purpose. However, distribution of such hard-copy data must be accompanied with a verbal notification that such data cannot be presumed to be accurate for any purpose and that the recipient of the data should take appropriate steps to acquire such information directly from the proper sources.

All hard-copy information distributed to the public shall have attached the following disclaimer:

"This information was developed by the Agencies for their own use. Distribution of such data to the public is done as a public service. No Agency makes any representations, warranties, expressed or implied, concerning the accuracy, completeness, or suitability of this data for purposes desired by the recipient of this information. By the receipt and acceptance of the data, the Recipient agrees that the Agencies shall have no liability in connection with the use of this information by the Recipient. The Recipient waives all and any rights and claims for liability against any and all participating Agencies."

3.   The Agencies shall share their GIS digital data in a format and procedure as established by the Greenville County Geographic Information Alliance.

4.   In no event shall the undersigned be liable to the other Agencies for any activity involving use or misuse of the digital data covered under this Agreement. Each Agency waives and releases the other from any such use resulting in any and all loss or damage including, but not limited to: (a) any monetary loss; (b) any loss of data; and (c) all other indirect, special, or consequential damages arising out of or related to this Agreement or the performance or breach of this Agreement.

5.   No Agency warrants or represents that this system or the data contained therein is fit for any purpose or is free of errors.

6.   The Agencies acknowledge that there are no warranties, expressed or implied, respecting this Data Sharing Agreement or the GIS digital data provided or shared, and that the digital data, the database, and associated materials shared, translated or provided by either party, are provided "as is" with no warranties. Each Agency assumes any risk that may be incurred by use of the data or the GIS System.

7.   If at any time an Agency determines that the continuance of this Agreement is not in its best interest, the Agency may immediately terminate its participation upon written notification to the other parties. Upon termination, the undersigned Agency shall have the right to retain the last database furnished.

In witness whereof, the undersigned have entered into executed and delivered this agreement as of the respective dates set forth below.