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Organization

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Note: this grant is being managed by the SC DNR on behalf of the South Carolina Geographic Information Council (SCGIC)

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Executive Summary

A Fifty States Initiative CAP grant was awarded to South Carolina and was used to help develop a strategic plan for the state for GIS. This was accomplished through a series of consensus building exercises that were specifically focused on the input of local government participants. The results of these outreach sessions provided information on what the local government organizations needed and found to be valuable. These same needs were in many cases identical to what the state agencies required. These were then solidified into a series of pilot projects in order to focus on data building across jurisdictional boundaries to help facilitate better decision making. Furthermore, needs for more active levels of communication were voiced. This resulted in a series of talking points which were developed for working with decision makers in order to better communicate the importance and value of GIS and GIS data. As funding and data sharing are two key issues in South Carolina, a research/interview trip was conducted to visit with state and local government representatives from a state that has several programs South Carolina currently does not, namely a State Geographic Information Officer, and a legislated funding mechanism for GIS data development and maintenance.

Project Narrative

Summary of Project Activities

This project was focused on increasing coordination and cooperation throughout the state and to help build relationships with local government organizations through consensus-building exercises. This was accomplished through a series of facilitated meetings held throughout the state where local government organization were invited to participate. A contractor with facilitation experience was utilized in order to maximize the effectiveness of the meetings. The goal of the meetings was to determine key barriers and challenges to participation in collaborative statewide GIS efforts. A total of 96 people from 26 different counties participated in the outreach sessions, and meetings were also held with the above-identified collaborating state agencies. In addition, to capture additional input an online survey was conducted, and 38 people from 11 counties responded. The total local government response represented 64% of South Carolina's land area, and 71% of the population. Following the meetings, the information gained was used to produce a strategic plan proposing what can be done in order to help remove said barriers and effect a positive change in the relationship between state and local GIS. The end-goal was to increase participation between local and state government in relation to GIS data sharing and development. This is in direct line to assist with Criteria 6 of the nine criteria for successful coordination: ("Does your state have mechanisms to work and coordinate with local governments, academia, and the private sector?").

After the strategic plan was written, aspects were immediately implemented. Several goals were voiced by the local government participants that, if realized, would be of benefit not only to local government, but also to state agencies as well. These goals were framed up in a series of pilot projects that have been quite successful.

Key Accomplishments to Date

All outreach sessions have been conducted and feedback was utilized to write the strategic plan. From the recommendations identified in the strategic plan, five pilot projects were launched. In light of the current economic situation, it was anticipated that any pilot projects identified would need to use little to no additional funding to move forward. The pilot projects and their status are included below:

- Multi-county pilot project to make statewide street centerlines fully routable – This pilot is still underway as of the writing of this document. The E911 office has partnered with local government data developers to produce a statewide street centerline for geocoding purposes. This layer is utilized by multiple state agencies for geocoding purposes, as it includes address ranges and other pertinent information, but because the data is maintained at the county level, the centerlines are not routable across county boundaries. The South Carolina Department of Transportation and Lexington County have partnered on a pilot project to look at bringing the data together from the two different sources in order to make a more up to date map, that can be used not only for geocoding but also for routing. Preliminary examination of the data has been completed and a functional specifications document is currently being written to allow for the development of a software component to assist with this process. Initial testing is anticipated to begin in early 2010. Once completed, the project will be able to allow in any volunteering county organizations who wish to participate.
- Multi-county property parcel data pilot – This pilot has been completed. The purpose was to examine the parcels from a number of adjoining counties to look for overlaps and gaps and to identify if similar field structures (or at the least, similar field content) existed between the counties. The results showed that similar field content existed, but that there were overlaps and gaps at county boundaries. This is through no fault of any of the counties, but rather is due to the scale of the original reference boundaries in GIS. Data was being built at a very large scale, and the original reference boundaries were from a much smaller scale. In addition, South Carolina is in the process of updating its state and county boundaries, and this is a process that may take a number of years to complete. Further, as the data was being built, each county was building their own parcels, as computers were not powerful enough to display masses of parcels from neighboring counties simultaneously. This pilot was conducted by a local government organization, which illustrates the continual increase in cooperation and participation between state and local government within the state. After the conclusion of this pilot project, awareness of the increased value of the parcels was identified, and multiple counties are now providing their parcel data to the state in an ongoing effort to maximize the use of the GIS data for the benefit of the quality of life of the citizens. This data has been shared by the counties with the state, and so is being incorporated into the state spatial data inventory, but as yet is not able to be made part of the NSDI due to data sharing restrictions being placed on the data. Even so, a fair number of counties have their own web services set up such that the data can be accessible directly from their county websites.
- Statewide orthoimagery web service – This pilot is still in process. Initially, it was anticipated that this particular pilot would not be able to be conducted until additional funding could be identified once the economy turned around. However, one of the collaborating agencies (Budget and Control Board) had the ability to upgrade its servers in order to start serving out the imagery. This imagery blankets the state with data ranging from six to twelve inch resolution. Initially, the performance speed of the service was not fast enough to allow for effective use. As of the writing of this document, ESRI's

Image Server has been installed and is in the process of being tested for better speed of access, etc. If an effective performance level can be reached, this would represent a great value to the counties and to the state agencies, as duplicative storage/serving efforts within organizations would not be required. This data has been shared by the counties with the state, and so is being incorporated into the state spatial data inventory, but as yet is not able to be made part of the NSDI due to data sharing restrictions being placed on the data. Even so, a fair number of counties have their own web services set up such that the data can be accessible directly from their county websites. If performance speeds and bandwidth usage allow, and if the counties will allow for their imagery to be made part of a statewide service, the imagery will be made available to the NSDI.

- Address points – This pilot has been completed and has resulted in an ongoing operation that will be sustained. Not all counties have address points, but for those that do, participation was extremely high. The county (or municipality, where municipalities maintain their own address points) provides their address points, and the data is then turned over to the Department of Health and Environmental Control, where the data is standardized (field structure) and then made available to other state agencies. This data has been shared by the counties with the state, and so is being incorporated into the state spatial data inventory, but as yet is not able to be made part of the NSDI due to data sharing restrictions being placed on the data.
- Statewide geocoding service – This pilot project is ongoing. A custom statewide geocoding service was built by the Department of Health and Environmental Control, with the initial idea that any data partner would be able to utilize the service. Some security issues still need to be addressed, so currently any data partner that needs addresses geocoded can submit them and DHEC will process them. The address points have been incorporated into this service, as have the updated street centerlines. All data layers that DHEC maintains are in the process of being updated to the most accurate location using the service (where GPS coordinates have not been collected). This has proven to be very successful, and has benefited both state and local government organizations, as both utilize many of the layers (including but not limited to daycares, hospitals, hazardous waste sites, public facilities, restriction zones, and critical infrastructure, etc.). DHEC also had an accuracy standard that would indicate the level of spatial accuracy of each of the points once geocoded. This standard is in the process of being updated, and input has been solicited from local government and state organizations. This will allow for record level metadata to be captured during the geocoding process.

Additional key accomplishments to date include the following:

- Provide value added data back to local authorities – Through the use of the statewide geocoding service, data being made available back to local organizations aligns with the locally developed GIS data, such that additional spatial editing of infrastructures such as hospitals and daycares are not required.
- Informational fliers - Additional value was being provided back to the citizens in other ways, through better decision making by using locally developed data, but these efforts were not widely published and thus were chiefly unknown. In order to further motivate local government organizations to participate and actively share data, informational fliers are in the process of being created which outline how the state agencies would utilize such data. The first flier completed was focused on address points. This is another way to give back, by providing a straight forward, non "GIS speak" document that can be

easily consumed by decision makers at all levels, and helps to express the value and benefit of GIS data.

- Development of talking points for all GIS stakeholders – With additional assistance from the vendor, a series of talking points have been developed to help GIS personnel effectively communicate the importance of GIS data to the decision makers tasked with determining how limited funding can be applied. This type of document can assist with future acquisition of funds for continued support of GIS, by providing straight forward information
- Collection of success stories, benefits and lessons learned – This is still in process, and is being conducted in conjunction with a team from Winthrop University in Rock Hill, South Carolina. They are currently conducting interviews with multiple local government organizations on the benefits of GIS, and these will be compiled into a study for general consumption
- Increased levels of communication – This is an on-going effort, greatly bolstered by the outreach sessions, and will continue moving forward in order to help maintain and secure additional data partnerships and partnering opportunities between state and local government organizations. As of the writing of this document, through increased communications, a statewide schools layer is currently under development that will be built and maintained with the assistance of multiple state agencies, and will look to the local government organizations for validation and corrections on the layer. This data will then be made available to any and all parties needing the information.
- Greater understanding of the role of a GIO, and potential funding options for GIS – Through multiple interviews with both state and local government organizations in a state that already has a GIO, and has funding in place to assist with GIS development, we have gained a greater understanding of how such a program might be implemented in South Carolina

How Inclusive is Your Effort?

A strategic plan was originally developed for South Carolina in 2001, but focused mainly on state agencies. In this project, specific effort was focused on the inclusion not only of the state agencies, but also the local government organizations that produce GIS data, such that their voice could be heard. This was widely successful. It is believed that because of the efforts for inclusion of local participants, local government organizations have been increasingly interested in sharing data with state agencies as well as working on specific projects of joint benefit. This has resulted in increased cooperation in areas such as standards development, planning for and organizing the statewide GIS conference, etc.

How Has Statewide Coordination Changed as a Result of this Project?

Prior to this project, there were strong sentiments that state and local organizations could not (and did not) work well together, and did not effectively share data with one another. This project has shown the importance of communicating ongoing efforts where the state is producing data and/or products that are of benefit to local organizations. These efforts are more clearly being communicated now. Thus, local government organizations are more highly motivated to share data with state agencies for the purpose of making better decisions. Further, in multiple cases the local government organizations are also learning of different types of data that are available from the state that they might not have been aware of before. This has resulted in a significant “win-win” situation. Also, during the outreach sessions some local government organizations expressed interest in some data from state agencies that was not readily available. While this data had not been actively withheld prior, it was not realized that such data would be of benefit to local organizations, and efforts have been made to make this

data more readily accessible. In addition, the local data that is being shared is now being conflated into master data sets for the state by a given state organization that has volunteered to steward such efforts (e.g. DHEC and the address points). This adds value to the data for other state organizations, making it more readily available and thus used more, while removing duplication of effort for multiple organizations to conflate the same data, and also minimizes the number of data requests from state agencies that local government organizations have to address. This has allowed for a state level point of contact for access to such data. While this aspect is still in the implementation phase, it has already seen wide sweeping support from local government data providers.

It is also hoped that through continued cooperation on data sharing and projects, coupled with increased communication, that we (as a GIS community) may gain a greater voice within the state and as a whole may be able to better communicate a clear message of need for funding of particular layers during discussions with key decision makers.

What practices or activities led to success? What practices or activities have not?

The activities that led to the most success included bringing in an unbiased outside facilitator to assist with the outreach sessions. The idea was to make certain that the local government voices were being heard and that their messages were not being adversely affected by participants from the state level. Also, because the sessions were specifically focused on local participation (not inclusive of state agencies during the outreach sessions), then the suggestions for action could clearly and indisputably be attributed to local participants. This too, was key, in that several of the suggestions, if implemented, would clearly benefit state agencies. It was important to demonstrate that these same suggestions came from local participants for them to be embraced by other local government organizations not attending a particular outreach session.

So far, all activities undertaken have led to success. It is important to note, that in South Carolina the GIS culture regarding open data access (public domain) is chiefly adhered to by state agencies, but not by local government organizations. Further, it appears that the state does not have the authority to demand access to locally developed data, so the best way of gaining access has been through asking for cooperation and participation without any unfunded mandates. If the data were demanded from local government organizations, this action would most assuredly stunt the progress that is currently being made. Many local government organizations choose to sell their data. The outreach sessions, while helping to facilitate additional data sharing between state and local organizations, have not thus far allowed for expansion of the sharing to include federal agencies. This is because it is understood that if the federal agencies get access to the data, that they would then freely redistribute the data to third parties and therefore break the government to government data sharing cooperation that is desired by the local government organizations. The data sharing within the state is helping to bolster the state spatial data infrastructure, and will mean that the data (when fully assembled) is ready in times of emergency or disaster. It is hoped that in the future, with continued cooperation and data sharing within the state, that ultimately the perception and focus will shift such that open sharing of the data with federal partners will be possible. This will be an ongoing effort that will be assisted through both time and any financial contributions that the state and/or federal government organizations can provide to help offset data building and maintenance costs.

Next Steps

Describe the next steps in your project

Moving forward, we will continue to work on getting additional data layers in the key areas associated with the pilot projects above. Ultimately, if allowed by local government organizations, we would like to set up web based services for use of the data in a seamless, multi-county service. In addition, we are going to test using data replication services with one or more counties to help ensure that the data in use by the state is as up to date as possible. While data replication will not work for all local government organizations (some do not have GIS web servers, others are restricted by IT security protocols), it is anticipated that some of the more populated areas and areas with the fastest growth may be able to participate. If so, this would represent the greatest impact in keeping the data at the state level up to date.

Further, at the state GIS conference in January, a session will be held to share more information on the talking points developed (as described in "Additional Key Accomplishments to Date" above).

How will this project continue into the future and remain viable?

It is anticipated that annually the strategic plan will be reviewed and modified with a view forward of the next five years. The data that is being shared will continue to be collected and brought together in statewide datasets for use by state agencies, and uses for said data will continue to be communicated to local government organizations in order to emphasize the importance and benefit of data sharing and data access.

Where do you need assistance?

Additional methods and means of helping to fund data development and maintenance would be of key benefit. If ways can be found to offset the costs associated with data creation, etc., it would further help to facilitate data sharing. Furthermore, if funding vehicles could be identified that would allow for statewide projects to be executed (e.g. LiDAR, aerial photography acquisition, etc.), economies of scale could be realized. Such data would benefit government agencies at all levels as well as private sector organizations interested in using such data for purposes such as economic development.

What type of assistance do you need?

Financial assistance would be excellent for data building / maintenance purposes. Other than that, grant based assistance to help develop data replication services and/or applications would be also of great value in order to help keep the state's versions of the data as up to date as possible.

Feedback on Cooperative Agreements Program

What are the CAP Program strengths and weaknesses?

The strength of the program comes from the varied types of grants that are available in order to assist with advancement of GIS initiatives and programs. In my experience, I did not encounter any weaknesses.

Where does it make a difference?

It makes a huge difference. Through the relatively small amount of money we received (less than \$50,000), we were able to conduct multiple outreach sessions, get local government buy-in to the program, develop a strategic plan, research funding options, create speaking points for talking with decision makers, and ultimately begin to collate additional layers for our SSDI.

Without the assistance from the CAP grant, we would not have been able to get a neutral seasoned third party to assist with the effort. Without the neutral, seasoned facilitator, it is firmly believed that most, if not all of the work completed, would not have been possible.

Was the assistance you received sufficient or effective?

Yes – it was both sufficient and extremely effective. This level of “seed money” was crucial to the project.

What would you recommend that the FGDC do differently?

No suggestions at this time.

Are there factors that are missing or additional needs that should be considered?

No suggestions at this time.

Are there program management concerns that need to be addressed, such as the time frame?

Having a one year timeframe is not long enough, given the procurement vehicles in South Carolina, as well as the logistical planning required to bring in all necessary parties. However, because the CAP grant program allows for extensions, with the added time, everything was able to be completed.

If you were to do this again, what would you do differently?

Given the opportunity to do this again, it would be beneficial to have one or more additional outreach sessions specifically focused on state agencies, and to try and draw in agencies that are not currently involved in the Geographic Information Council.