

The Hawai'i Geographic Information Coordinating Council

Geographic Information System Strategic Plan



APPLIED GEOGRAPHICS, INC.

Empowering People with Spatial Solutions

Applied Geographics, Inc.

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Executive Summary

Geospatial technology has been in use throughout many areas of the State of Hawaii for many years. In 1999 the Hawaii Geographic Information Coordinating Council was formed as a 501.c.3 not-for-profit organization to provide coordination of geospatial activities among the wide range of GIS users in order to avoid duplication of effort, promote data sharing, and maintain data standards throughout the state. The mission of HIGICC “is to bring together and continue to build the geographic community into a cohesive, recognized coordinating body that facilitates the use, development, sharing, and management of geographic data and communicates the value of geographic information to citizens and decision-makers.”



Now celebrating its ten-year anniversary HIGICC leadership decided to take a look at its accomplishments, its recent and planned activities and reach out to all of the stakeholders of Hawaii to see how the Council could better serve the community as a whole. To help carry out the process HIGICC applied for and was successful receiving a grant from the Federal Geographic Data Committee CAP grant program to develop the future goals and objectives of the community in the form of a Strategic Plan. The effort was overseen by a Steering Committee comprised of members of the HIGICC board and the process was facilitated and documented by Applied Geographics, Inc, of Boston, Massachusetts.

The State of Hawaii has a long history with the use of geospatial technology and has made significant investments in GIS data and infrastructure throughout the years. Numerous state and all four major County government agencies use the technology and generate a rich collection of geospatial data which is used in a variety of map making, analysis and web viewing applications. However, there still exists significant issues with coordination of these activities and communication of what is being done where. The disparate geographic nature of the islands further complicates coordination and the ability to readily communicate with each other.

Through a series of planning and informational gathering sessions held in Kauai, Maui, Hawaii, and Oahu, a series of individual interviews, and feedback gathered by an on-line survey four strategic goals were developed:

- Ensure that HIGICC completes the Strategic Plan to set an agenda for the next five years that is aligned with the expressed needs of the HIGICC membership and the Hawaii geospatial community.
- Develop an outreach and communications strategy that targets constituencies throughout the state, reaches underserved portions of the community, and increases membership, participation, and collaboration with activities.

- Develop a strategy for assisting data acquisition projects and developing geospatial data standards that cross geographic and administrative boundaries.
- Develop a funding strategy that maintains Council fiscal viability, enhances the ability of HIGICC to apply, compete, receive and administer grants, and expands the Council's ability to identify funding opportunities that support the Council and stakeholders across the state.

The following document lays out each of these goals in more detail, defines the programmatic steps that can be accomplished in both the short and long-term, and defines the internal and external efforts that will need to be accomplished to achieve each goal.

Finally, the programmatic goals were prioritized and three primary short term goals have been established for the implementation program that are believed to be the most important and realistic steps that can be achieved that will help move this program along:

- Complete the Strategic and Business Plans
- Improve the HIGICC web site
- Increase HIGICC membership

There is much to draw upon to make these short-term goals achievable within the next year, and the other goals within the next 4-5 years. There is a large and diverse GIS user community with an established user group. This community is composed of practitioners from all levels of state and county government, utility companies are engaged and are using the technology, and the military and federal government has a strong supportive presence. Most importantly the community has demonstrated a desire to coordinate and be more effective at what they do.

The following details the process that was followed to identify these goals and the process that should be followed to achieve the goals that have been established.

1 Strategic Planning Methodology

1.1 Getting Started

The National Spatial Data Infrastructure (NSDI) Cooperative Agreements Program (CAP) is an annual Federal Geographic Data Committee (FGDC) program to assist the geospatial data community through funding and other resources in implementing the components of the NSDI. The Hawaiian Geographic Information Coordinating Council (HIGICC) was awarded a CAP grant in 2008. Applied Geographics, Inc. was hired to facilitate the development of this strategic plan.

1.2 Preliminary Planning

The first stage of this project was to conduct a kick-off meeting to refine the National States Geographic Information Council (NSGIC) strategic and business planning

templates and tailor them to the needs of the HIGICC. In addition a steering committee was established that consisted of the following people from the following agencies:

- Ron Salz: Senior Consultant, GEOCGI, Current President of HIGICC
- Arthur Buto: Department of Land and Natural Resources, State of Hawaii
- Joan Delos Santos: IT Specialist, Office of Planning, State of Hawaii
- Salim Mohammed: Maps/GIS Librarian, University of Hawaii at Manoa Library
- Royce Jones: Hawaii-Pacific Region Manager, ESRI
- Henry Wolter: USGS Geospatial Liaison, Hawaii and Pacific Basin Islands

At this meeting the project team established the overall approach and goals for the project.

1.3 Strategizing

1.3.1 Geospatial Council Steering Committee Meetings

Six conference calls/meetings were held with the steering committee throughout the project duration. Participants included members of the council representing all of the major stakeholder groups in Hawaii. These sessions also worked to further define the key strategic goals, vision and to identify the programmatic goals outlined in this document.

1.3.2 Stakeholder Sessions

Five informational gathering sessions were held around the state as group visioning sessions to identify and clarify goals and to define the needs of all of the stakeholder groups in Hawaii. One session was held in each of the three counties of Kauai, Maui, and Hawaii, and two sessions were held on Oahu County. Invitations were sent out to nearly four hundred individuals that were envisioned as potential stakeholders of the effort. These groups included federal, state, and county government staff, utility companies, non-profit entities, the University and K-12 educational sector, and private companies. Listserv announcements, direct email, phone calls and personal invitations were all used as mechanisms to attract the largest attendance. In total more than eighty people attended the sessions.

At these sessions the project team presented the following topics:

- Who and what is HIGICC?
- Background and history of NSDI and Federal initiatives leading to this project.
- Project overview: what is being done and why?
- Discussions to understand where all stakeholders think they are
- Discussion to define where stakeholders want to be in the future
- Define what HIGICC's role should be in getting the stakeholders there

Throughout the presentation interactive discussions were held that revolved around the establishing the vision and goals for the future of geospatial technologies in Hawaii.

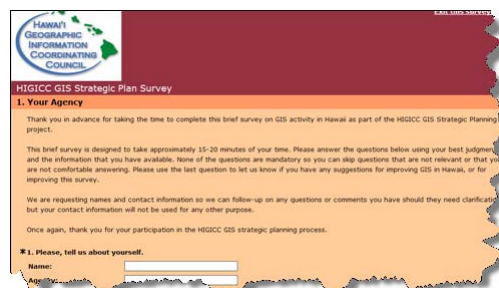
During these sessions information was collected about the way geospatial technology is used at different levels of government and by the other stakeholders groups. The meetings also served a secondary purpose of informing the geospatial community of the HIGICC and provided an overview of the council's other activities. Finally, a number of national initiatives and systems were explained to the participants including the National Spatial Data Infrastructure (NSDI), the 50 States Initiative, and Geospatial One-Stop (GOS). The majority of time at each workshop was spent sharing among participants and collecting information about specific geospatial applications and how the technology and supporting data is or could be created, collected, used, and shared throughout the state.

1.3.3 Individual Interviews:

In addition to the stakeholder workshops individual/small group interviews were also held with a number of people and agencies to gather additional input. These interviews included meetings with the USGS Hawaii and Pacific Basin Islands NSDI Partnership Office, State of Hawaii, Office of Planning, Counties of Maui, Kauai, Oahu, the City and County of Hawaii, Pacific Disaster Center, and the University of Hawaii.

1.3.4 On-line Web Survey and Questionnaire

An on-line questionnaire was developed to reach out to people who did not attend the sessions and to ask more detailed questions of those who did attend the sessions. The survey included 37 detailed questions on the following topics:



- General information about the respondent and his or her organization
- Number of users and length of time using geospatial technology
- The organization's background and current uses of the technology
- An inventory of GIS software, databases and internet capabilities
- Inventory of challenges facing the organization
- Funding and policy
- Geospatial training needs
- Establishing priorities for HIGICC
- Rating past performance of HIGICC
- Data usage and needs

Over 110 individuals responded to the survey. The survey results are incorporated into the requirements section of this document, but it is important to note that the survey was not a scientific survey. The survey was a voluntary effort that provided a data point for decisions made, was considered representative, but may not be statistically accurate.

1.4 Authoring

The final stage of this project was to develop this document, the strategic plan, and also to develop one business plan. The strategic plan outline was developed and writing assignments were made at a meeting of the steering committee. The volunteers then wrote and shared their sections with another individual on the team, and then all sections were combined and refined into a cohesive draft version of the document. The draft document was put up on the project WIKI site. Finally, the HIGICC membership was informed of the plan on the site, asked to review it, feedback was received, reviewed by the steering committee, and a final version of the plan was created. The plan as a whole was adopted at a special meeting held in April, 2009.

1.5 Monitoring

As with any strategic plan, conditions, technology, and the people applying the plan and using the technology change over time. It is important to review this plan on a regular basis and track the progress that is being made. It is recommended that this plan be visited on an annual basis, reviewed and updated to reflect the accomplishments that have been made, the goals that have been achieved, and the changes in direction that are needed.

2 Current Situation

2.1 Who are we?

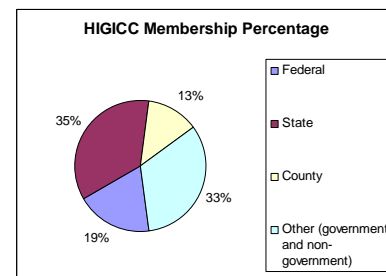
HIGICC is a 501.c.3 not-for-profit organization registered in Hawaii in 1999. HIGICC is run by volunteers from Hawaii's geospatial community to provide coordination of GIS activities among a wide range of GIS users in order to avoid duplication of effort, promote data sharing, and maintain data standards throughout the state.

On an annual basis HIGICC elects a board of directors that consists of 11 Directors representing federal (2), state (2), county (2), other Government and Non-Government entities (2), and other users at large (2). HIGICC also elects four officers who take the lead on organizing activities and setting the direction for the group for the year.

There are two measures of who HIGICC actually and potentially represents – HIGICC's actual membership and those individuals and groups who responded to the strategic plan online survey.

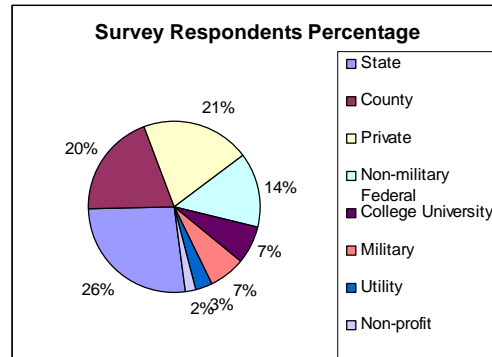
HIGICC consists of over 50 active individual members and 8 organizational members. The membership of HIGICC shows representation approximately as follows:

- Federal 19%
- State 36%
- County 13%
- Other (government and non-government) 33%



The demographics of the 110 individuals who responded to the strategic plan online survey were:

- 27% State
- 20% County
- 21% Private
- 14% Non-military Federal
- 7% College University
- 7% Military
- 3% Utility
- 2% Non-profit



At the five stakeholder workshops, feedback was solicited as to whether certain groups were missing or not well represented in these statistics and in the participation of HIGIC sponsored meetings and events. The consensus was that 1) non-profits, 2) education – both K-12 and University, and 3) certain Federal agencies were under-represented both in HIGICC membership and in our strategic plan survey respondents.

2.1.1 Mission

The current HIGICC Mission Statement as stated in the HIGICC By-Laws Article II, Section 1 is:

“The mission of the HIGICC is to bring together and continue to build the geographic community into a cohesive, recognized coordinating body that facilitates the use, development, sharing, and management of geographic data and communicates the value of geographic information to citizens and decision-makers.”

81% of survey respondents felt that HIGICC was fulfilling its mission. However, only 61% of survey respondents said that HIGICC is doing an excellent or good job. This would indicate that HIGICC needs to improve the quality of products and services provides to the membership and the community. It may also signify a need to modify the mission statement to reflect additional roles.

Issues:

- HIGICC does not have a level of participation of all stakeholder groups to ensure that the membership represents the diverse geospatial community in Hawaii.
- There are questions whether Federal government employees will continue to be allowed to serve in these Director positions due to potential conflict of interest. HIGICC may need to find a different Board structure.
- Mission statement may be outdated or HIGICC products and services may need to be improved

Possible Action Items:

- HIGICC should create a **Membership Committee** to look into ways of resolving discrepancies of active and participating members

- HIGICC should create a **Legal and Compliance Committee** that reviews the organizational structure, bylaws and changes that are needed to reflect current conditions and laws.
- HIGICC should expand and/or improve the quality of products and services that it provides.
- The HIGICC Board should review and revise (if appropriate) the mission statement.

2.2 Where are we now?

Mature User Community

HIGICC members, survey respondents and stakeholder workshop attendees (the HIGICC community) tend to be more mature users of GIS technology. More than half have been using GIS technology for more than ten years, and almost three quarters for at least five years. Fewer than 7% defined themselves as a “new user” – someone using the technology for less than two years. The following table compares the results of the HIGICC survey to four other recently completed surveys for the states of Minnesota, Utah, and Connecticut and the District of Columbia.

Table 1: Number of Years Using GIS

State	<2 Years	>5 years	>10 years
Connecticut	10%	68%	35%
District of Columbia	8%	69%	15%
HIGICC	7%	72%	53%
Minnesota	4%	77%	56%
Utah	7%	35%	24%
Average	7%	62%	32%

A few observations that can be made from comparing the HIGICC community to the other states surveyed:

- There appears to be a pattern that supports that it is difficult to engage less experienced users (<2 years) in on-line surveys and councils such as HIGICC. On average only 7% of all participants have less than 2 years of experience, so HIGICC is not unusual, but resolving this issue should still be a priority.
- In general the GIS community that is engaged is made up of users that have over 5 years of experience. On average 62% of respondents to all five surveys have over 5 years of experience. HIGICC is on the higher side of the results.
- The HIGICC community does seem to be even more experienced than the more general community with over half of the community having over ten years of experience.

Medium to Large Sized, Part-time GIS Groups and Users

Over half of the HIGICC community works in medium-sized GIS groups where there are two to fifteen GIS users within their group, fewer than 5% are the only individual in their

organization using GIS, and nearly 40% work in large GIS groups with more than fifteen GIS users in their group. This is quite different than where most states are on average.

State	Only Person	2-5 People	5-15 People	>15 People
Connecticut	26%	29%	15%	13%
District of Columbia	11%	31%	19%	20%
HIGICC	5%	30%	22%	39%
Minnesota	7%	22%	29%	26%
Utah	6%	16%	26%	49%
Average	11%	20%	22%	29%

On average states have over twice as many one-person shops using GIS, but these results are somewhat skewed by CT and the HIGICC community appears to be typical with respect to percentage of one-person shops. The HIGICC community does have a higher frequency of large GIS shops with over 61% having more than five people.

Interestingly, more than 50% of the HIGICC community identify themselves as “part-time” users of GIS technology. This is likely indicative of the trend of more common and widespread use of GIS tools by professionals in a wide variety of fields, unlike the old model in which only “expert” GIS users were able to use the software and data, which itself is a result of GIS software becoming much easier to use through the years.

70% of the HIGICC respondents outsource GIS services to private consultants. This is a consistent trend across our comparison states in that both one-person and large GIS groups will often contract with outside consultants for technical support that is beyond their internal capabilities. In comparison to other states, however, HIGICC’s percentage is quite high. (Connecticut 35%, Utah 29%, Minnesota 13%, DC 31%)

Uses of Geospatial Technology

From both the on-line survey and feedback at the stakeholder sessions it was learned that the HIGICC community uses GIS for many varying functions. The top five uses of the technology were identified as:

- **Planning:** community planning, alternate development scenarios, map production, zoning analysis, scenario modeling, land use management, transportation planning, natural resource management, etc.
- **Engineering/Asset/Infrastructure Management:** engineering mapping, design, and analysis, managing physical assets such as water distribution systems, sanitary and storm sewer systems, and pavement management.
- **Environmental:** natural resource management, environmental data management, marine analysis, coastal resource management, etc.
- **Parcel recording:** recording and storing information about a parcel, vacant properties, real estate for sale, etc.

- **Public Safety/E911/Emergency:** 911 dispatch response, emergency management planning and response, etc.

The community also reports the following as application areas where they think GIS could be better used:

- **Parcel/Land records management:** parcel mapping, county tax mapping, real estate management, etc
- **Tourism:** hard copy printed maps, accommodation mapping, transportation route and system mapping, web based attraction mapping, directions, event planning, etc.
- **Public notifications:** high speed notification systems, warnings and alerts, invitations, public notices
- **Permitting:** Permit evaluation, code enforcement, inspection planning and tracking, route planning, etc.
- **Service requests:** Requests for service by citizens, vacationers, and businesses.
- **Economic development:** demographic analysis, siting analysis, market analysis, work force analysis

Issues:

- How does HIGICC educate and engage new users?
- How can HIGICC better support part-time GIS users?
- What can HIGICC do to support thee top five applications of GIS in the community?
- What can HIGICC do to help increase GIS usage in underutilized areas?

Potential Action Items:

- HIGICC’s new **Membership Committee** should look into ways to educate and engage new users.
- HIGICC should create a new **Education and Outreach Committee** that creates template marketing materials that support current users, part time users, and areas of low use (PowerPoint presentation, handouts, flyers, case studies)
- HIGICC’s new **Membership Committee** should establish an inventory of members and their areas of expertise as a talent pool registry or speaker pool using GISInventory.net.
- HIGICC should create a **Web Site Working Group, as part of the IT Committee** that looks to expand web site capabilities to include a blog, WIKI, list-serve or another informational sharing framework.

2.3 Strengths & Weaknesses

2.3.1 Strengths

The list of strengths of the HIGICC is short, but important. They are:

- **Presence of a state clearinghouse:** HIGICC was an early contributor to the NSDI Clearinghouse, having first contributed data in the late 1990's. In addition to the NSDI clearinghouse (<http://hawaii.wr.usgs.gov/>) the State of Hawaii's GIS program has a well established, data rich geospatial clearinghouse. (<http://hawaii.gov/dbedt/gis/>)
- **Coordination of geospatial activities in Honolulu:** Across all levels of government and throughout the islands the stakeholder community acknowledged that the geospatial activities were well coordinated in Honolulu.
- **Commitment to promote geospatial technology:** The energy, enthusiasm, and commitment to the use and application of GIS technology in the HIGICC community are very high. Members often participate in presentations at workshops, educational sessions, and conferences to promote the use of the technology.
- **Small geospatial community:** The small number of GIS coordinators and counties that exist in Hawaii make it much easier to coordinate activities versus elsewhere in the country. HIGICC's small intimate community is part of what makes this possible. There are only four county GIS coordinators/managers and the State GIS lead agency (DBEDT/OP) stays in close contact with them. Many Federal agencies have offices in Honolulu so that when they meet (usually on Oahu) most all interested agencies can participate.
- **Ad-hoc communication** (works well for those who know): Because the HIGICC community is a small, intimate community communication within the community is very good and those that are involved know what is going on.

2.3.2 Weaknesses

Some of the strengths identified above can also be seen as weaknesses. For instance, the ad-hoc communication that works so well for those who know, but it does not effectively reach all of those who need to know. Some the weaknesses identified in the survey and then elaborated upon in the stakeholder workshops are grouped as follows:

- **Training**
 - Lack of university and community college programs
 - Lack of K-12 programs
 - Lack of GIS training for non-GIS staff
 - Lack of advanced training opportunities for GIS staff
- **Staff**
 - Lack of available full-time GIS staff
 - Lack of interns with experience in GIS
 - Lack of qualified job candidates
 - Low pay scales and high cost-of-living
- **Data**
 - No central repository of data holdings
 - No central inventory of data holdings
 - No central inventory of planned data acquisitions
 - No outreach program for data acquisition
 - Need to identify data purchasers and engage them early

- **Funding**
 - Lack of adequate or stable funding for GIS
 - Need more executive management support
 - Need to pursue more grants
 - Need to help others pursue grants
- **Communication**
 - Need outreach to those that do not know about HIGICC
 - Need outreach to those that do not know about GIS
 - Need coordination of activities between islands

Issues:

- How does HIGICC make sure that all data and the best, most current data is contained within the clearinghouses?
- How can HIGICC best coordinate information on data holdings and acquisitions?
- How does HIGICC improve communication and coordination beyond Honolulu activities?
- How can HIGICC broaden its reach while still maintaining the benefits of a small intimate working group?
- How does HIGICC formalize ad-hoc communication so those that are not involved, or new users can find out what is going on?
- How can HIGICC improve GIS training opportunities in Hawaii?
- What can HIGICC do improve GIS staffing?
- How can HIGICC help GIS groups receive more stable funding from their agencies?
- How can HIGICC improve communication and outreach statewide?

Potential Action Items:

- HIGICC should create a **Data Inventory and Assessment Committee** that is responsible for topics such as standards and coordination of data acquisition projects.
- This new **Data and Inventory Assessment Committee** should implement GISInventory.net to improve the organization of existing data holdings, planned data acquisition projects, and better inventory data custodians.
- HIGICC should use video conferencing facilities available on all islands for membership meetings, board meetings, working group meetings and other group presentations.
- HIGICC should rotate meetings to different islands when funding allows.
- HIGICC should add section on their web site to include training opportunities.
- HIGICC's new **Education and Outreach Committee** should look into ways to expand, coordinate and enhancing training opportunities.
- HIGICC should create a **Finance Committee** that looks at topics such as grant funding opportunities, membership fees, conference fees, etc.

2.4 Opportunities & Threats

The most significant opportunity that was identified through the strategic planning effort is that the HIGICC GIS community recognizes the need for better coordination and is willing to participate. The past history of working together provides a solid foundation for this effort. One guideline in this regard is for HIGICC to focus on state-to-local, state-to-federal, and local-to-federal coordination, and rely on the State GIS Office (DBEDT/OP) to coordinate among the different state government departments and then coordinate with the rest of the HIGICC community.

The most significant threat that was identified is that much of the GIS community lacks sustainable funding which impacts staff and training. Some programs finance GIS through grants which can vary from year to year and the sole reliance on this type of funding makes it difficult to do any long range planning or execute on programs that span more than one fiscal year. In the past budget cuts hindered even some of the most critical programs from moving forward and with the threat of even steeper budgets cuts even established GIS programs may be in jeopardy.

3 Vision & Goals

The mission of the Hawaii Geographic Information Coordinating Council (HIGICC) is to “bring together and continue to build the geographic community into a cohesive, recognized coordinating body.” With one voice, HIGICC facilitates “the use, development, sharing, and management of geographic data and communicates the value of geographic information to citizens and decision-makers.”

HIGICC strives to coordinate and encourage the geospatial data producers, providers, distributors and consumers in the State of Hawaii, benefitting both Hawaii and those interested in Hawaii data. The strategic and programmatic goals below were developed by actively soliciting opinions from throughout the Hawaii geospatial community through both the online survey and the stakeholder information gathering sections.

3.1 Strategic Goals

The following four goals are the long-term (five year) “strategic goals” to support the mission of HIGICC:

3.1.1 Complete the Plan

Ensure that HIGICC completes the Strategic Plan to set an agenda for the next five years that is aligned with the expressed needs of the HIGICC membership and the Hawaii geospatial community. Begin the process of developing business plans to execute on these goals.

3.1.2 Improve Outreach and Communication

Develop an outreach and communications strategy that uses activities to target constituencies throughout the state, reaches underserved portions of the community, and increases membership, participation, and collaboration.

3.1.3 Facilitate Data Acquisition and the Development of Data Standards

Develop a strategy for assisting with or helping coordinate data acquisition projects and developing geospatial data standards that cross geographic and administrative boundaries.

3.1.4 Identify and Implement Funding Strategies

Develop a funding strategy that maintains Council fiscal viability, enhances the ability of HIGICC to apply, compete, receive and administer grants and expands the Council's ability to identify funding opportunities that support the Council and stakeholders across the state.

3.2 Programmatic Goals

In order to meet the four strategic goals identified above the following programmatic goals have been established and will be carried out.

3.2.1 Complete the Plan

Ensure that HIGICC completes the Strategic Plan to set an agenda for the next five years that is aligned with the expressed needs of the HIGICC membership and the Hawaii geospatial community.

The completion of this Plan is timely at the 10 year anniversary of the HIGICC. This has been a major undertaking for an all-volunteer organization. It has been well received and it captures the current state of the Council at this point in time. The process of completing this Plan has strengthened the Council and the community. It also serves as an example and encouragement to geospatial data and service providers (agencies and organizations) to adopt strategic planning methodologies.

Completion of the Strategic Plan and subsequent business plan components will be, in and of itself, a major success for the Council. In the first 10 years of the HIGICC there has never been an explicit public agenda for action. Agendas for action have anecdotally been based on: (1) the interests of the incoming officers, particularly the President; (2) any urgent issues that arose (3) GIS Day activities; or (4) conference planning and implementation, in those years in which a conference (GISMAP or PacGeo) was held. This plan will set forth and focus the primary agenda of action and activities for the Council for the next three to five years.

Announcing the availability of the Draft Plan for comment will foster additional community input. Publication will ensure that the steps to accomplish the programmatic goals are transparent to the public. This will increase understanding of the HIGICC mission and potentially recruit participants for Council activities.

The completion of the plan also proves that HIGICC can apply, compete, receive and carry out projects based on a major federal grant. Meeting the requirements of this CAP grant is in effect a "resume item" for future Council grant applications, whether from Federal or other sources.

The following tasks are envisioned to achieve success with this goal:

External efforts:

- Develop and distribute the online survey (completed)
- Host information gathering meetings throughout the state. (completed)
- Announce the Draft Strategic Plan for review. (completed)
- Announce the Draft Business Plan for review.
- Host statewide stakeholder meetings to present the final plans.
- Announce the plan to local and national decision makers.
- Meet FGDC deadlines and publication requirements.
- Increase national visibility for Hawaii's geospatial community.

Internal efforts:

- Complete the project with Board Member volunteer effort in combination with paid consultant.
- Set and follow 3-5 year priorities.
- Form working groups and schedules to implement plan priorities.

3.2.2 Improve Outreach and Communication

Develop an outreach and communications strategy that targets constituencies throughout the state, reaches underserved portions of the community, and increases membership, participation, and collaboration with activities.

The second strategic goal for HIGICC is to improve all facets of outreach and communication. HIGICC must truly represent the entire Hawaii geospatial community to fulfill its mission. As expressed in the meetings and surveys, there is statewide agreement on this critical issue. Many people outside of Oahu are unaware of HIGICC, though they may know of past PacGEO or GISMAP conferences. Many people on Oahu are unaware of significant GIS activities occurring in the counties of Kauai, Maui or Hawaii. The accomplishment of this goal may be the most challenging of all strategic goals as it includes both the organization of activities as well as internal capacity building to shepherd the activities.

Most HIGICC activities are currently undertaken by small ad hoc groups of volunteers. With the exception of the PacGEO/GISMAP conferences, standing committees of the Board have not been established to implement various HIGICC goals, activities or projects, including Outreach and Communications. This limits continuity and slows productivity from Board to Board. Accomplishing this strategic goal will require creating internal and external structures, policies and procedures.

An important first step toward improving outreach and communication was the implementation of an integrated, web-based membership tracking and contact management software suite during the 2007-2008 fiscal year. Past Boards struggled with the challenge of using multiple, inconsistent databases, spreadsheets and paper records. The new software lets the Secretary track memberships, send automatic reminders,

advertise events, publish custom targeted web pages and send informational email blasts, as well as collect payments securely online. Among the next challenges facing the Board are completing the migration of the HIGICC web site to a single site, using technology to facilitate neighbor island participation in activities, and enhancing email communication with members.

External efforts:

- Hold conferences, subject focused gatherings and general interest meetings.
- Organize social gatherings, including lunches, dinners, presentations, and membership meetings.
- Improve scholarship outreach.
- Create web pages customized for Board officers, members and the community.
- Create and publish newsletters.
- Distribute job announcements and host resume bank.
- Share information such as communications from and about the Hawaii Association of Nonprofit Organizations (HANO), the National States Geographic Information Council (NSGIC), grant opportunities, as well as other meetings and conferences.
- Rotate meetings throughout the State, as funding allows.
- Use video conferencing to reach across the state to improve communication and participation in HIGICC activities and events.
- Organize and hold recruitment and job shadowing days
- Educate directors, politicians, and associations about HIGICC and the Strategic plan
- Provide marketing support or create template materials including speaker's bureau, case studies, presentation materials (PPT, podcasts), press releases, etc.

Internal efforts:

- Create **Education and Outreach Committee**
- Create **Activities Working Group under the Membership Committee**
- The new **Finance Committee** should include a **Scholarship Working Group**
- Increase training and expertise in the HIGICC membership and contact management software, Wild Apricot.
- Create **IT Committee** through a **Web Site Working Group** should look at ways of improving HIGICC's current web presence including creating a portal for data discovery, implementing GISInventory.net, creating online forum for collaboration, and hosting job listings and information on grants

3.2.3 Facilitate Data Acquisition and the Development of Data Standards

Develop a strategy for assisting data acquisition projects and developing geospatial data standards that cross geographic and administrative boundaries.

The third programmatic area is to increase the Council's focus on spatial data. Interest was expressed in the Council taking a leadership role in coordinating possible data

acquisition efforts and establishing data standards. Part of the mission of the Council is to coordinate data acquisition and facilitate its distribution. The Council's role, however, is limited to that of a coordinating body as it has neither existing funding sources nor the technical capacity to host data sets.

History - The Council has a proven track record of adding value to data acquisition efforts at the Federal level. This includes the Geospatial Implementation Plan (I-Plan) which provided an overview of current data holdings, the data needed, funding expended and funding needed. (<http://higicc.org/iplan.html>) This document has been used to brief many officials on the status of geospatial data, leading to funding in areas such as Indigenous Names, updating aerial photography and higher precision elevation data.

County Autonomy - County governments in Hawaii are autonomous authorities that have very little incentive to cooperate on common data standards. The unique fact of having neither common administrative nor geographic boundaries often leaves each county with different funding sources and varying commitment levels to acquire common data sets. Efforts such as the cadastral fabric promoted by GDSI Hawaii (Geographic Decision Systems International) in the 1990's sought to develop a common parcel standard that made County data easy to combine across the State. Current issues attracting interest are seamless topography/bathymetry, LIDAR and development of parcel standards.

State and Federal need for standards - While the counties may not have a vested interest in common data standards, the State of Hawaii, the Federal Government and organizations and individuals doing statewide work require standardized data sets. The challenge is finding the opportunities to encourage and possibly find funding to (1) develop data standards and (2) develop the data sets, as well add value to current FGDC standards and customize them for Hawaii.

Impartial Coordinating Body - HIGICC is being asked to be an impartial coordinating body to bring the counties as well as other organizations and groups (such as surveyors, realtors, biologists) together to address statewide data standards. This will require an initial survey to prioritize the data standards that need attention.

Coordinated data acquisition - Successful consortia have been organized for data purchases in Hawaii. These efforts have been shepherded both by members of HIGICC and by companies working to benefit the Hawaii geospatial community. The efforts include the SPOT Image data, the Hawaii Ikonos Consortium and most recently jointly funded Digital Globe DOQQs (found at <http://hbmp.hawaii.edu/website/hic/hic.asp>). The Council has been encouraged to act in this role again, so that the community knows when contracts are being issued and opportunities to leverage funding and equipment exist.

External efforts:

- The **Data Inventory and Assessment Committee** should survey the community to get a list of priority data sets for which the Council can facilitate and assist with the development of state-wide standards.

- The **Education and Outreach Committee** should encourage use of the NSGIC Ramona GIS Inventory Tool (<http://gisinventory.net/>).
- The **Education and Outreach Committee** should reach out to other professional communities on issues that will cross professional lines.

Internal efforts:

- The **Data Inventory and Assessment Committee** should:
 - Enhance the understanding of existing data standards.
 - Enhance project management expertise for shepherding standards.
 - Enhance understanding of various communities of interest regarding data.
 - Work with the **Finance Committee** to enhance accounting procedures and contracting expertise for data acquisition efforts.
- The **Education and Outreach Committee** should develop special advocacy topics, such as LIDAR, parcels and topography/bathymetry.

3.2.4 Identify and Implement Funding Strategies

Develop a funding strategy that maintains Council fiscal viability, enhances the ability of HIGICC to apply, compete, receive and administer grants and expands the Council’s ability to identify funding opportunities that support the Council and stakeholders across the state.

The greatest long term organizational challenge for HIGICC is raising money every year, which is further exacerbated by the recent downturn in the global economy. Funds are used for ongoing expenses such as contact management software, accountant services, scholarships, conference attendance and sponsoring activities. In past years, revenues were generated exclusively from conference receipts and membership dues. Fiscally conservative decisions have left the Council in a strong cash position, but not one secure enough to ensure fiscal viability if more funds are expended than gathered. The challenge is self management – like all other activities the Council depends on the volunteer efforts of members to apply, monitor and otherwise administer the grant programs.

During fiscal year 2007-2008 the Council secured three Federal grants and one private grant totaling \$100,000. The grants have paid for the Strategic Planning process and a successful indigenous names project. By collecting a low, reasonable overhead charge, the Council was able to maintain a positive cash flow in a year not enhanced by a conference. Perhaps more important, the Council developed expertise in the process of applying for, receiving and administering grant monies.

These successes have garnered interest throughout the geospatial community. They demonstrate additional methods for raising revenue – not only for sustaining the Council, but to support other activities. The geospatial community sees the Council developing expertise that could benefit data collection and other projects.

This newfound expertise could result in HIGICC playing a role in discovering and advertising grant opportunities, assisting in grant writing, bringing together interested parties and managing the grant funds on behalf of HIGICC partners.

Internal Efforts:

- The **Finance Committee** should:
 - Search for and then advertise grant opportunities to HIGICC membership and the community.
 - Assist in writing and/or review of grant applications.
 - Bringing together interested parties around common grant opportunities.
 - Receive, manage and distribute grants awarded for efforts in Hawaii.
- Attend grant writing workshops.
- Become a grant writing organization.
- Apply for additional grants to benefit projects in Hawaii.

4 Requirements

4.1 Data Requirements

4.1.1 NSDI framework layer categories with descriptions

[Executive Order 12906](#) calls for the establishment of the National Spatial Data Infrastructure defined as the technologies, policies, and people necessary to promote sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community.

The goal of this Infrastructure is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability.

The NSDI has come to be seen as the technology, policies, criteria, standards and people necessary to promote geospatial data sharing throughout all levels of government, the private and non-profit sectors, and academia. It provides a base or structure of practices and relationships among data producers and users that facilitates data sharing and use. It is a set of actions and new ways of accessing, sharing and using geographic data that enables far more comprehensive analysis of data to help decision-makers choose the best course(s) of action.”

Within the NSDI vision seven themes of geographic data have been defined as the priority datasets that are produced and used by most organizations. The framework's seven geographic data themes are geodetic control, orthoimagery, elevation, transportation, hydrography, governmental units, and cadastral information. Various surveys indicate that they are required by a majority of users, form a critical foundation

for the NSDI, and have widespread usefulness. A cooperative approach to producing and sharing these common datasets has collective benefits for most organizations that use these resources.

The following table summaries each of the seven themes and the current status, coverage, and responsible party for each and the outlook and understanding of needs for future layer development.

Framework Layer	Definition/Purpose	Current "Best-available" GIS Dataset	Coverage, Accuracy, and Currency	Outlook and Outstanding Needs
Geodetic Control	Primary reference system for accurate coordinate positioning; basis for LiDAR and orthoimagery; key to accurate land surveys	National Geodetic Survey – CORS (Continuously Operating Reference Stations): http://www.ngs.noaa.gov/CORS/	Covers all main 8 Hawaiian Islands (with stations on Kauai, Oahu, Maui and Hawaii)	Hawaii has an NOAA/NOS/NGS Geodetic adviser and very good control Statewide http://www.ngs.noaa.gov/products_services.shtml
Orthoimagery		Other sources of imagery include: Pacific Disaster Center (http://www.pdc.org/mde/explorer.jsp), USGS (http://hawaii.wr.usgs.gov/), and others – refer to the Hawaii Statewide GIS Program's Link Page: http://hawaii.gov/dbedt/gis/links.htm		
		Quickbird, 2005 – present	Covers main 8 Hawaiian Islands, with many patches missing due to cloud cover	
		NGA	Oahu, 2005	
		LandSAT, 1999-2000	Covers all 8 main Hawaiian Islands	
		IKONOS, 2002-2009	Covers all 8 main Hawaii Islands, except Niihau, which is being purchase by Office of Planning, patches missing	
		Emerge Infrared, 2000-2002	Covers all main 8 Hawaiian Islands, with patches missing due to cloud cover	

		Emerge Natural Color, 2000-2002	Covers all main 8 Hawaiian Islands, with patches missing due to cloud cover, derived from EmERGE Infrared	
	Georeferenced photograph that provides a geographic basemap	1977/78 USGS orthophoto quads	Covers all main 8 Hawaiian Islands	Hawaii is data rich in imagery but because of their location and weather patterns none of the existing coverages are within a prescribed time period and all have significant cloud coverage in our windward areas. None of these datasets are public domain in their native format other than the NRCS EmERGE Imagery, but this dataset only covers about 70% of the main 8 Hawaiian Islands and is between 7 to 10 years old. A high resolution imagery dataset at the 1 meter or higher resolution for rural areas is needed. High resolution (at 1 foot or better) is needed in urban areas. All datasets need to be public domain in their native format.
Elevation	Complete and seamless USGS 10 meter for all eight of the main Hawaiian islands	10 Meter Contours		The data is useful for most applications and modeling but does not meet the needs in Hawaii's low lying Coastal Areas.
	Elevation data derived from IFSAR	Coverage – Island of Oahu – 5 foot contours – contours could be developed at this interval for other islands as well.		This data set has proven that it has many shortfalls in areas with heavy vegetation. This data set is not public domain.
		LIDAR data	This coverage exists for all islands but only up to the 15 meter contour from the high water mark. This data set is inconsistent , varies in quality , access is limited and varies in resolution	A high resolution (1 meter or better) elevation dataset that meets FEMA flood mapping standards is needed for all islands. http://www.fema.gov/plan/prevent/fhm/lidar_4b.shtml Dataset will be updated on a periodic basis to document shoreline changes, etc.
	Spot elevations, in feet, scanned from USGS Mylar quad maps for selected islands.	Spot Elevations (Feet)	Coverage: Islands of Oahu and parts of Maui , Accuracy: derived from 1:24,000 USGS Mylar Quadrangle maps, Currency: 1983	

	Spot elevations, in meters, scanned from USGS Mylar quad maps for selected islands.	Spot Elevations (Meters)	Coverage: Island of Lanai, Accuracy: derived from 1:24,000 USGS Mylar Quadrangle maps, Currency: 1983	
Transportation	Street network of Oahu, contains both non-military and military streets. Provides a foundation for routing applications and geocoding essentials. This layer is also used by the City Fire, EMS 911 CAD system and the City Police 911 CAD system.	Oahu Street Centerlines	Coverage: Island of Oahu, Accuracy dependant on source data & Although this data set is considered complete, individual objects may have been inadvertently omitted or incorrectly placed during the digitization process, Currency: 12/11/07 as of last download by State from HOLIS website	
		COK (County of Kauai Centerlines)	Coverage: Island of Kauai, Accuracy: GPS Derived by NavTeq for Kauai County, Currency: 12/2007.	
	Names and addresses of Streets and Roadways (major and minor)	COH (County of Hawaii) Centerlines	Coverage: Island of Hawaii, Accuracy: Rectified to County Parcel data therefore Not positionally accurate, Currency: September 2006	
	Roads and road names for the islands of Maui, Molokai and Lanai	Maui County Roads (2008)	Coverage: Islands of Maui, Molokai and Lanai, Accuracy dependent on various source data. I.e., Maui County Dept. of Public Works, Maui County Real Property Tax Division (Dept. of Finance), subdivision maps, TMK plats, satellite imagery and field checks by Maui County GIS staff with vehicle-mounted GPS, Currency: March, 2008	

	"Major roads" & "Other roads" extracted from the USGS 1983 DLGs for the main Hawaiian islands.	DLG Roads	Coverage: Islands of Kauai, Oahu, Molokai, Lanai, Maui and Hawaii, Accuracy: derived from 1:24,000 USGS Mylar Quadrangle maps, updated 2001 data has 5 meter accuracy, Currency: 1983 & 2001	
	2002 Roads from Tiger Line Files	2002 Tiger Roads	Coverage: Main Hawaiian Islands, Currency: 2002	
Hydrography	Streams	Various Stream Layers from various sources/experts (see http://hawaii.gov/dbedt/gis/download.htm#PHYSICALFEATURES/BASEMAPLAYERS-Streams)	Coverage: Main Hawaiian Islands, Currency: various	
	Surface water feature data includes reaches, drainage network and streams.	National Hydrography Dataset	the main 8 Hawaiian Islands have high resolution 24K resolution Hydrography	A consistent and maintained Hydrography data set is needed with a State of Hawaii Data steward. Stewardship MOU is in the signature phase. DLNR/DOH/DBEDT have agreed to share stewardship of a new National Hydrography Dataset (NHD) for Hawaii.
Boundaries	Various Political Boundaries/Administrative Layers	Numerous boundary files are available at the State GIS Data web site: http://hawaii.gov/dbedt/gis/download.htm .	Depending on the layer. Metadata must be checked	
Cadastral	Polygons that reflect the division of property for the purpose of assessment by Real Property	Hawaii County (May 2009); Kauai County (March 2008); Maui County (Feb 2009); CCHON (August 2008)	Check metadata for current status	A consistent and current Statewide parcels layer is needed that is also in the public domain

4.2 Technology Requirements

In all of the sessions and based on the results of the survey most of the users said that they have good access to the software that they needed to get their jobs done. The HIGICC community is a predominantly ESRI-based community with over 80% of the users saying they use ESRI products. In addition to ESRI 60% of the users said they use Google Earth and 35% use AutoCAD for spatial data creation and/or maintenance.

From a relational database standpoint 61% of the survey respondent said they use MS-Access, and 55% use ArcSDE with approximately half of those using either MS-SQL Server or Oracle.

Using web-services or web-based applications as a mechanism to distribute data out to the end users was discussed at all of the stakeholder sessions. Because Internet connectivity exists virtual everywhere within government agencies this is a viable solution. It is important to note, however, that Internet services does not cover 100% of the islands at this point, so there is a need to maintain multiple methods for distribution of data, such as DVD.

5 Implementation Program

5.1 Phasing & Milestones

Three primary short term goals have been established for the implementation program:

- Completing the Strategic and Business Plans
- Improving the web site
- Increasing HIGICC membership

Each of these and the process that will be followed is discussed in the following section.

5.1.1 Complete the Plan

This Strategic Plan is the culmination of many months of collaborative effort, which involved soliciting feedback from stakeholders and GIS community members through a series of statewide informational meetings and online surveys. The Plan itself was drafted in a collaborative and inclusive process consistent with the meetings leading up to it. Initial drafts by Steering Committee members underwent internal review and comment after which HIGICC members were invited to provide further input and comment.

Once the Plan is finalized in April 2009, it will be formally adopted by the HIGICC Board and published on the HIGICC website. In the ensuing months, stakeholders and GIS community members will have opportunities to learn more about the Plan at informational sessions held on each island. In addition, briefings will be prepared for decision makers, local and national leaders, and other key players in the GIS community.

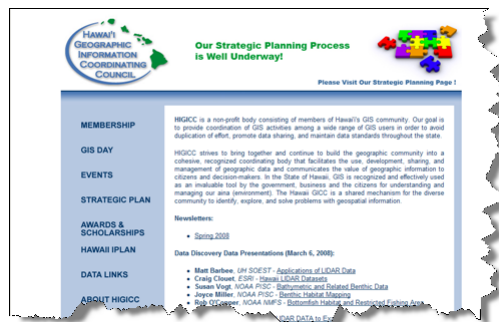
The Plan provides a figurative roadmap for the next three to five years and allows HIGICC to focus its energies on these short- and long-term goals. However, it is a living document and will be reviewed and revised periodically to ensure that it continues to reflect the realities and priorities of its stakeholders. The Annual Meeting may provide a forum for such review and discussion.

Developing and implementing specific business plans will require further discussion and planning by the Board to assess resource requirements and availability, as well as to prioritize major activities. In some cases the governing documents of HIGICC may need to be revised – i.e., the Mission Statement, Articles of Incorporation and Bylaws – to ensure that they enable the strategic initiatives outlined in this Plan.

5.1.2 Improve Web Site

As the meetings and surveys revealed, communication with HIGICC is a high priority with stakeholders. One effort to improve and expand communications will focus on exploring various Internet technologies on the HIGICC website to make it a more effective communications vehicle.

HIGICC is in the midst of migrating its website and domain to a new site with robust email, membership, collaboration, event scheduling and payment processing capabilities. The new site already hosts the member and email contact databases and has been used successfully to register attendees (and securely accept payments) for the luncheon speaker series. The transition should be complete by the end of March 2009.



In the upcoming calendar year, HIGICC, through its newly formed **IT Committee** will explore additional communication and collaboration technologies, including blogs, discussion forums, private web pages, surveys, podcasts and webcasts, to assess their suitability for addressing issues raised in the strategic planning sessions (e.g., better outreach and communication, online forums for collaboration, standards development and event broadcasting to the neighbor islands).

Blogs, forums and wikis

Technology offers a number of different electronic venues for presenting information and soliciting input. *Blogs* and *podcasts* offer periodic, authored content with subscription and feedback capabilities. Appropriate uses include topic-specific or working group updates, or educational and informational postings. *Forums* offer two-way communication often with both email and browser-based interfaces. These are appropriate for short-lived discussion topics where an outcome or resolution is desirable, such as problem-solving, or where user input is being solicited, such as an issue debate.

Wikis offer a collaborative authoring space and range from unrestricted wikis, allowing anyone to modify anything on the site, to moderated wikis where content and authoring are more restricted. These are appropriate where the desired outcome is a document, such as a strategic plan or an encyclopedia or a standards document. The choice of which technology to use depends on the task at hand and the resources available to maintain or manage the content.

Private / group pages

Wild Apricot's site allows restricting pages to only specific groups of registered users to access the resources found there. These *private web pages* could serve as online collaborative workspaces for the working groups and committees that will tackle the business plans and strategic initiatives of this Plan. As an added benefit they facilitate participation by neighbor island stakeholders in these working groups.

Surveys

Online *surveys* were used in the initial stages of developing this Strategic Plan. HIGICC will continue to use surveys to periodically solicit feedback from GIS community members. These online surveys can be embedded directly into the Wild Apricot web pages, further "branding" them as originating from HIGICC.

Webcasting and videoconferencing

Webcasting and remote access technologies will be explored as means of enabling neighbor island and remotely located stakeholders to participate in real time in HIGICC-sponsored educational, business or networking events (e.g., luncheon speaker series, Board meetings, committee meetings, Annual Meeting, etc.). Archived web casts and videos could serve as a record and resource for future reference. *Videoconferencing* may be available through State and UH managed facilities, and also through fee-based private videoconference networks. This is a well-established technology, but is somewhat limited because participants must be located in the videoconference facility and different networks may not interconnect.

HIGICC Event Listings

The HIGICC events listing will continue to be updated on the website to keep members and the community abreast of upcoming activities, and email notifications will continue for those in the contact database.

5.1.3 Increase Membership

Implicit in HIGICC's mission is that it be representative of the GIS community in Hawaii. HIGICC has been largely successful at the Board level with representation from the Federal, State, County governments and the private sector. However, as the information gathering sessions and surveys revealed, there are important segments that are underrepresented or simply not being reached in the membership demographic – notably, K-12, higher education, non-profit organizations and the tourism industry.

HIGICC must increase efforts to reach these underserved communities by initiating contact or building on current efforts. For example, HIGICC is a member of the Hawaii

Association of Nonprofit Organizations (HANO) and could become a more active in that group to educate non-profits on the value of GIS. An HIGICC Board Member recently received a favorable response from a teachers' group after presenting a preview of a curriculum development module. This could be expanded to include more educators and to recruit their participation in the development effort. It was noted that the tourism industry was absent from all of the meetings and surveys. A marketing plan should be developed targeting this industry and others that may benefit from the use of spatial technology, but are underrepresented in HIGICC.

Equally important is retaining current members, encouraging them to renew from year to year. The number of members has remained fairly constant over the last few years, while the use of GIS technology and spatial data has increased dramatically.

Last year memberships were successfully solicited at several end-of-year events with the incentive that they would be immediately honored and good through the following year. This resulted in both new members and renewals of lapsed members. While this is not a particularly desirable way to reactivate lapsed members, encouraging memberships should be an ongoing effort.

A **Membership Committee** should be formed and tasked with developing plans to address recruitment of new members, including reaching underserved segments, and retention of current members. Strategies should include:

- Tracking current membership and the talent pool that exists
- Ensuring membership represents the diverse geospatial community
- Look into ways of resolving discrepancies between active and participating members
- Increased outreach efforts to underserved segments [work with Education and Outreach Committee]
- Creating and **Activities Working Group** that plans membership meetings and coordinates with the **Education and Outreach Committee** events discussed later
- Training members on the use of the Contact Management System, Wild Apricot
- Better "branding" of HIGICC – increased recognition of the organization through merchandise. [work with **Education and Outreach Committee**]
- More aggressive renewal campaign
- Additional member benefits
- More effective use of the mailing list

5.1.4 Hold networking events/meetings/annual conference

This year saw the resurrection of the *luncheon speaker series* due in large part to the volunteer efforts of a small, but effective organizing force. The popularity of this series echoes the sentiment expressed at the information gathering sessions. Users want more educational and networking opportunities. Neighbor island stakeholders have been mostly neglected and excluded from these opportunities, but are no less interested. Efforts are underway to utilize technologies such as videoconferencing and webcasting, to enable them to participate as well.

A regular feature of the HIGICC calendar has been the *Annual Meeting*, which combines three activities into one event – a business meeting at which the Board is elected, an educational experience at which user projects are highlighted, and a networking event at which users meet other users in an informal social atmosphere. In response to feedback received at this year's meeting, the format of the meeting will be reviewed to possibly expand the social networking portion.

The Luncheon Speaker coordinating group should evolve into the **Activities Group**, be reorganized and incorporated into a larger **Education and Outreach Committee** with responsibility for organizing social, educational and community activities, including the Luncheon Speaker Series, the Annual Meeting and organizing and participating in conferences.

5.1.5 Fund part/full time support staff

For ten years HIGICC, as an all-volunteer organization, has successfully brought the once-small GIS community together. However, as the role of GIS became increasingly important in policy, planning and decision-making processes, the GIS community itself grew both in size and breadth. Accommodating the needs of this large and diverse community while also trying to implement this Strategic Plan severely taxes the energies of the Board Members. Achieving these ambitious goals requires a consistent and committed effort. Administrative support in the form of a paid staff person or contracted services will allow the Board to remain focused on implementing the steps needed to achieve the strategic and programmatic goals. Subject to obtaining sustainable funding, the Board will pursue options to recruit, hire and train an administrative support person.

5.1.6 Improve transition process

Continuity, institutional memory and knowledge transfer have become more important as HIGICC has grown and matured as an organization. A **Transition Task Force** will be formed to complete work already underway to finalize a Transition Plan to help orient new Board Members and to document important elements of the governance of HIGICC. This effort should be complete by the end of the fiscal year in June. By providing this documentation as well as Board development and training opportunities, it is hoped that a smooth transition will be ensured, Board productivity maximized, and new Board member anxiety lessened.

5.1.7 Create Other Standing Committees

In addition to the two already discussed committees and to better spread the work out and engage more stakeholders in the process, several other committees will be formalized to carry out more specific tasks. Each committee will be tasked with developing a detailed business plan that details their approach to achieving their goals and lays out a stepwise approach and timeline to the tasks and initiatives that have been identified from the Strategic Planning approach. The committees and their roles and responsibilities are listed below:

Legal and Compliance Committee: This committee will be responsible for reviewing court decisions and pending litigation to determine the impact on the HIGICC and the industry. The Committee also serves as a forum for the discussion and analysis of key legal questions affecting the industry. Key initiatives that were identified that this committee will work on include:

- Reviewing Federal employee involvement in HIGICC and how it compares to nationwide involvement
- Reviewing HIGICC's mission statement and making sure it is current
- Reviewing HIGICC's organizational structure and making sure proper representation exists
- Reviewing HIGICC's bylaws and adjusting based on requirements imposed by current and future laws.

Education and Outreach Committee: This committee will be responsible for identifying training needs of the HIGICC community, facilitating training opportunities and to promoting geospatial education through outreach, creative programs and online resources. The key initiatives that were identified for this committee are:

- Creating template marketing materials that support current users, part time users, and areas of low use (PowerPoint presentation, handouts, flyers, case studies)
- Organizing and holding conferences, subject focused gatherings and general interest meetings.
- Working with the **Activities Working Group** to organize social gatherings, including lunches, dinners, and presentations.
- Creating and publishing newsletters.
- Organizing and holding recruitment and job shadowing days
- Educating directors, politicians, and associations about HIGICC and the Strategic plan
- Identify training needs, organizing, planning, and orchestrating training days
- Announcing, advertising, and promoting the Strategic Plan
- Encouraging the use of the NSGIC Ramona GIS Inventory Tool (<http://gisinventory.net/>).
- Reaching out to other professional communities on issues that will cross professional lines.
- Identifying special advocacy topics, such as LIDAR, parcels and topography/bathymetry.
- Distributing job announcements and host resume bank on web site.
- Improving marketing and branding to funding agencies, potential partners and the geospatial community to build awareness of HIGICC's active role and its proven track record in order for HIGICC to continue to succeed and be effective.
- Developing and maintaining a list of marketing contacts and procedures and timetables for media releases and developing appropriate press releases to build awareness of geospatial and HIGICC activities.

Finance Committee: This committee is responsible for identifying, tracking, coordinating and reporting on existing and potential funding sources that may exist that would support the efforts of HIGICC. The will also manage external services that HIGICC may provide to the stakeholders such as grant services. Key initiatives that have been identified for this committee include:

- Sharing information such as communications from and about the Hawaii Association of Nonprofit Organizations (HANO), the National States Geographic Information Council (NSGIC), grant opportunities, as well as other meetings and conferences.
- Creating a **Scholarship Working Group** that manages HIGICC's scholarship program including outreach, selection, and distribution of funds.
- Looking at ways to expand and/or improve the quality of products and services that HIGICC provides.
- Reviewing and establishing membership and conference fees to make sure they are inline with comparable entities and adequately address the funding required for the event.
- Searching for and then advertising grant opportunities to HIGICC membership and the community.
- Assisting in writing and/or reviewing of grant applications.
- Bringing together interested parties around common grant opportunities.
- Receiving, managing and distributing grants awarded for efforts in Hawaii.
- Attending grant writing workshops.
- Becoming a grant writing organization.
- Applying for additional grants to benefit projects in Hawaii.

Data Inventory and Assessment Committee: This committee will identify existing data layers and needs and establish individual subcommittees tasked to evaluate, document and provide recommendations for each dataset, and establish policies, standards and general procedures for the submission, evaluation, maintenance, on-line access, and dissemination of all geospatial data within the purview of the Council. Key Initiatives that have been identified include:

- Surveying the community to get a list of priority data sets for which the Council can facilitate and assist with the development of state-wide standards.
- Coordinating the development of standards.
- Coordination data acquisition projects to make sure all stakeholders are involved.
- Implementing GISInventory.net to improve the organization of existing data holdings, planned data acquisition projects, and better inventory data custodians
- Work in conjunction with the **Education and Outreach Committee** to enhance the understanding of existing data standards.
- Work in conjunction with the **Finance Committee** to enhance accounting procedures and contracting expertise for data acquisition efforts.

It is important to note that the establishment of the committees is the final short-term goal, but the long list of activities that they will carry out will be executed over the long term.

5.2 Marketing the Program

Recognition of the HIGICC as a coordinating body and as an authority on geospatial technologies is an essential part of the mission of the organization. In addition to the outreach strategies detailed in previous sections of this Plan, workshop participants suggested several key statewide initiatives for which HIGICC's involvement would enhance the organization's visibility and authority, while also demonstrating the value of geospatial technology to decision makers. These initiatives are E-911, Climate Change, Education, Waste Management (including Recycling) and Alternate Energy.

5.2.1 Wireless E-911

Current Activities

Act 159/SLH 2004 (the Act) created a Wireless Enhanced 911 Board (the Board) which is administratively attached to the State Department of Accounting and General Services (DAGS). The purpose of the Act is to provide Public Safety Answering Points (PSAPs - facilities equipped and staffed to receive 911 calls, and dispatch appropriate public safety agencies to respond to those calls) and wireless providers with the funding needed to acquire technology that will enable PSAPs receiving 911 calls from wireless phones to see the caller's identification and location. The Act created a special fund outside the state treasury. Board members include representatives of state and county government and wireless service providers. The E-911 Commission website can be visited at <http://hawaiiwirelesse911.hawaii.gov/>.

Geospatial data and services have been and continue to be important to this initiative – for example, all counties have provided GIS data such as street centerlines, parcels and mileposts to be used by first responders to help in locating and responding to 911 calls.

In October of 2008, the Office of Planning called a meeting of key State, County and Federal representatives for a preliminary discussion of potential opportunities for added assistance to the E-911 Board by these agencies, as well as to discuss the possibility of submitting a proposal to the Board for funding of data sets that would be of benefit both to the E-911 effort and to the Hawaii geospatial community in general. Both LiDAR data and street address data acquisitions were raised as possibilities.

A meeting to identify the best available elevation data for the QA/QC of the Oahu (and possibly neighbor island) Pictometry imagery acquisition will be held with a wider group, including various HIGICC board members during the first week in December, 2008. It is anticipated that in addition to a recommendation regarding the most appropriate data to use for the Pictometry acquisition, a funding proposal related to elevation data acquisition may be developed for presentation to the E-911 Board.

Potential HIGICC Involvement

The counties are meeting the data needs of this initiative. HIGICC's most appropriate role in this initiative is to serve in an advisory capacity, as they have been invited to do in the December meeting described above. In addition, HIGICC may be able to assist in the development and support (via letters of support) of any funding proposals that may be

submitted to the E-911 Board. HIGICC may choose to use this initiative as a means to explore the establishment of standardization (e.g., means of collection, accuracy, attributes) of public safety-related data layers such as centerlines, parcels, mileposts, etc. Finally, as a coordinating body, it will be important for HIGICC to monitor, track and encourage sharing of geospatial data acquired as part of this initiative.

Perceived Benefits / Recommended Priority Level

HIGICC's potential involvement with the E-911 commission illustrates the need for a "marketing" effort for the organization to increase visibility so that HIGICC is automatically associated with issues dealing with spatial data issues. HIGICC needs to be able to reach groups such as this commission so that they are not making decisions without the expertise and advice of the geospatial community. Because HIGICC is not a well-known authority among decision makers in Hawaii (though we are gaining recognition among practitioners), we are not invited to assist in these initiatives. In this case, it is difficult to get a "seat at the table" – the meetings are high-level, and by invitation only. The upcoming meeting regarding Pictometry and elevation data standards may be the perfect opportunity to make our presence known and to show why involving HIGICC can be advantageous to groups such as the E-911 commission. Because this is a public safety initiative, and the E-911 Board includes high-level decision makers, HIGICC involvement as a trusted resource will enhance the organization's visibility and authority. For this reason, participation in this activity should be given a high priority.

5.2.2 Climate Change

Current Activities

There are a number of ongoing activities related to climate change in Hawaii. In 2007, the Hawaii State legislature passed Act 234, which established the State's policy framework and requirements to address Hawaii's greenhouse gas emissions by reducing and establishing emissions limits at or below 1990 levels by 2020. The directors of the State's Department of Business and Department of Health co-chair the Task Force established in the Act. The Task Force's website can be found at <http://hawaii.gov/dbedt/info/energy/greenhouse/>. A variety of GIS data, most found on the State GIS website has been used in the initial report.

In addition, the Hawaii Coastal Zone Management (CZM) Program, located within the State Office of Planning, is currently gathering information on climate change initiatives and opportunities for collaboration. Some known initiatives are:

- CZM will likely be tasked with assessing climate change within the next 2-3 years
- UH SOEST is involved in a large number of climate change studies
- Chip Fletcher (UH SOEST) is studying the impact of sea level rise on coastal areas in Hawaii.
- Karl Kim (UH DURP) is considering an economic modeling study of sea level rise impacts to coastal infrastructure.

- There is a UH Pacific RISA Program, (<http://pacificrisa.org>) whose mission is to support Pacific island and coastal communities to mitigate and adapt to the impacts of climate variability and change. RISA's activities include:
 - getting potential funding from NOAA
 - coordinating the 2009 Pacific Year of Climate Change.
- Sea level rise is an issue at the Federal level (Department of Homeland Security)
- NOAA Climate Office is conducting research and conducting various projects through its Sectoral Applications Research Project (SARP)
- NOAA Idea Center is considering organizing a climate summit
- Climate change is the theme for the 2009 Hawaii Conservation Conference.
- International Pacific Research Center is a climate research center whose focus is climate variation and predictability in the Asia-Pacific region, including regional aspects of global environmental change (<http://iprc.soest.hawaii.edu/>)

Potential HIGICC Involvement

There are such a substantial number of activities related to climate change being undertaken by a large variety agencies and programs that HIGICC may be able to offer some coordination or cataloging services, although it seems that CZM has begun this task. HIGICC might also consider posting climate-related funding opportunities on its website as a service to members.

Perceived Benefits / Recommended Priority Level

Like the E-911 initiative, the various climate change projects and activities occurring in the state are of great importance to Hawaii's future, and thus involvement by HIGICC in the various projects could raise the organization's profile. However, because the activities are so numerous, it could be that HIGICC's impact would not be that significant. The best approach may be to keep informed of various activities by our members, perhaps by asking NOAA or CZM for a periodic updates, rather than to seek a more active role for HIGICC at this time.

5.2.3 Education

Current Activities

As is the case with the initiatives mentioned above, there are a number of education-related activities taking place in the state, in which HIGICC is currently playing a role, or might have a role in the future.

An HIGICC committee, working with a UH graduate student, has been developing a basic curriculum module, targeted at intermediate school students. It uses Google Earth, and incorporates standards from the state DOE for geography, math and science. The goals of the curriculum are to help the students to: use geographic representation, interpret data to help make better decisions; understand how technology has changed society; and understand how technology helps to meet the needs of society. It has been well received by a small group of teachers who received a brief overview by the committee. The lessons are now being tested by several HIGICC Board members before finalization and roll-out to a test group of teachers. The lessons walk the students

through a series of exercises to familiarize them with the concepts of latitude and longitude (coordinate systems), map scale and distance, then finally through the use and interpretation of remotely sensed data (aerial images of Honolulu or areas familiar to the students, and aerial images of a foreign city [Cancun, Mexico]). In 2007 and 2008, this activity replaced HIGICC's annual half-day GIS Day event previously conducted by the City and County of Honolulu, the State of Hawaii, NOAA, and other HIGICC volunteers.

ESRI and the State Department of Education have signed a site license for ESRI software. The site license allows for both educational and administrative use and will help increase the use of geospatial technology in Hawaii public and private schools. The Maui Economic Development Board (managers of Project EAST described below) are partnering with State DOE to manage the site license.

There are also two legislative initiatives related to the use of geospatial technologies in our schools. Hawaii participates in the nationwide STEM Education initiative, which endeavors to prepare students, teachers and practitioners in the areas of science, technology, engineering and math (see <http://www.stemedcoalition.org/> for information regarding national activities, goals, reports, etc.). Information regarding Hawaii STEM programs can be found at <http://www.stemhawaii.com/>. In 2007, the Hawaii legislature enacted Act 111 to provide funding for the expansion of existing Hawaii STEM programs and pilot studies of new programs (see http://www.capitol.hawaii.gov/session2007/bills/SB885_CD1_.htm and Hawaii Revised Statutes §302A-431.7 and §302A-431.8).

Hawaii also participates in Project EAST (Environmental and Spatial Technology), which is a national educational initiative focused on student-driven service projects using the latest in technology. Also in 2007, the legislature passed Act 271, which provided funding for the expansion of Project EAST to additional schools statewide (see http://www.capitol.hawaii.gov/session2007/bills/HB1630_CD1_.htm and Hawaii Revised Statutes §302A-1314(p), §304A-1861, 1862 and 1863). Act 271 was enacted without the Governor's signature due to technical concerns related to the special fund that was established under the Act. It is not known whether the appropriated funds were released.

Potential HIGICC Involvement

There are several ways that HIGICC could choose to engage in the various educational initiatives taking place in Hawaii. The first and most obvious activity for HIGICC would be to continue with the curriculum development that has been undertaken and to continue to work with educators to see that the curriculum is successfully deployed in the classroom. With regard to both the Project STEM and Project East initiatives, HIGICC may choose to "adopt a school" in order to get involved in these areas. Note that STEM education takes place statewide, while all existing Project EAST schools are located on the neighbor islands. Another way to become involved in these areas would be to partner with the Women in Technology Project (<http://www.womenintech.com/projecteast.html>), or with the various county economic development boards (<http://www.edahawaii.org/>) all

of which are currently involved in both the STEM and Project EAST initiatives in Hawaii.

Perceived Benefits / Recommended Priority Level

Since its inception, the HIGICC has been involved in educational activities for Hawaii's students, most notably with its GIS Day activities. Though the organization has rarely received publicity or marketing benefits from these activities, it has given HIGICC members and participants great satisfaction in performing this public service. It would be beneficial both in terms of marketing and overall member satisfaction to continue involvement in various education initiatives – therefore this area should be given a high priority.

5.2.4 Alternate Energy

Current Activities

There are a multitude of alternate energy initiatives in Hawaii, several of which are already making at least some use of geospatial technology. Those projects, as well as those that do not yet appear to be using GIS but could benefit from the technology are listed below.

The Office of Planning (OP), State GIS Program has provided mapping services to the State Department of Business, Economic Development and Tourism (DBEDT) for a number of alternate energy projects including: geothermal resource areas; warm groundwater resources; solar radiation; wind speed; and proposed wind turbines and potential wave turbine site assessment. In addition, OP assisted DBEDT and the Department of Land and Natural Resources (DLNR) with a site assessment of two potential bioenergy projects on the Big Island pursuant to HRS 171-95, which circumvents the traditional bidding process for State lands and authorizes the Board of Land and Natural Resources (BLNR) to lease public lands to renewable energy producers through direct negotiation. Finally, OP hosts an interactive web application for DBEDT which displays various biomass resources throughout the State (<http://gis.hawaii.gov/website/Biomass>).

As noted at <http://hawaii.gov/dbedt/info/energy/policy>, the Director of DBEDT is the State's Energy Resource Coordinator, thus giving DBEDT the mandate to "...coordinate the efforts of all involved parties, establish and coordinate programs to effectuate energy conservation, and formulate plans for the development and use of alternative energy sources, so that there will be maximum conservation and utilization of energy resources in the State." A key to the State's energy policy is the development of alternative energy – including biomass, geothermal, hydropower, ocean thermal energy, solar, wave and wind. Descriptions, reports, plans and data related to the State's alternate energy initiative and activities can be found at <http://hawaii.gov/dbedt/info/energy/renewable/>. In the past year, there have been a number of laws passed in Hawaii related to alternative energy. These include:

- House Bill 2502, which allows solar energy facilities to be located on less-productive agricultural lands.

- Senate Bill 2034, which authorizes special purpose revenue bonds to help finance a 2.7-megawatt wave energy facility off the coast of Maui.
- Senate Bill 3190, which authorizes special purpose revenue bonds to help finance a solar energy facility on Oahu.
- House Bill 2168, which authorizes special purpose revenue bonds to help finance hydrogen generation and conversion facilities at the Natural Energy Laboratory of Hawaii Authority, located on the Island of Hawaii.

Finally, President-elect Obama recently proposed a new economic stimulus package for the U.S. that would include funding for alternative energy projects. Obama previously proposed creating millions of jobs by putting \$150 billion into alternative energy, but in late November he listed “green jobs” among the key investments that the government should make in a new economic stimulus package for the failing U.S. economy, signaling that energy funding could come even sooner than originally planned.

Potential HIGICC Involvement

As with the Climate Change initiatives discussed above, there are numerous Alternate Energy activities taking place in Hawaii, and it is likely that there will be an increase in federal funding for alternate energy, resulting in additional local projects. One important difference with the energy initiatives is that most are being undertaken by or coordinated with DBEDT. Because the State Office of Planning is administratively attached to DBEDT, and has a level of involvement in several of the activities, OP can serve as a liaison to HIGICC in this area, perhaps reporting to the Board quarterly or semi-annually (or more frequently if needed) on what activities are taking place, what alternative energy laws have been enacted, etc. One service that HIGICC might provide to the geospatial community would be to post information on the HIGICC website regarding energy-related RFPs which have a geospatial component.

Perceived Benefits / Recommended Priority Level

All of the alternate energy initiatives and projects mentioned above are critically important to Hawaii’s future. Hawaii is fortunate to have abundant resources that might be tapped for alternative energy, including solar, geothermal resources, wave energy and wind energy. As with the climate change initiatives listed earlier in this section, involvement by HIGICC in the various projects could raise the organization’s profile. In the case of alternate energy, DBEDT is already performing a coordinating function. The best approach would be to communicate ongoing activities to the membership (via periodic briefings by OP), and to post information regarding upcoming RFP’s. Both of these activities would be fairly easy to accomplish with HIGICC’s existing volunteer staff, would serve HIGICC’s membership and would raise the organization’s profile within the energy community, therefore it is recommended that these activities be given a high priority.

5.3 Measuring Success & Recalibration

One of the challenges facing this Board is formulating and implementing the action plans that follow from this strategic plan. With only a handful of volunteer Board Members, it

will be imperative to solicit the participation of the GIS community, especially while the strategic planning process is still relatively fresh in their minds. It may be a particularly opportune time to reach out to some of the newer members who attended the informational meetings or who have signed up recently as members. They will provide a fresh perspective, and at the same time may be encouraged to become more involved in HIGICC activities. Participation will also engender ownership in the plan and a stake in its success.

Each action plan should include benchmarks or milestones by which progress can be measured. These will provide opportunities at intermediate points along the implementation path for evaluation and reflection. Timetables will similarly provide ways to measure progress toward the plan outcomes. Inasmuch as there will be dependencies among various benchmarks and even among various plans, a periodic review of the progress should be made and timelines adjusted if necessary. Committees will review the progress of their individual plans, and Board meetings may be an appropriate venue to evaluate their impact on the progress of the overall strategic plan.

In order to keep this plan relevant to the needs of the organization and its constituents, progress should be reviewed and the plan revisited at least once a year. At this time the effectiveness of and outcomes from action plans can be discussed and evaluated, new action plans may be called for, and strategic directions may even need to be modified, discarded altogether or newly formulated. The Annual Meeting provides an appropriate venue for this discussion and review, as well as an overall evaluation of HIGICC's effectiveness in implementing this Plan (e.g., a "grade").









Continue to engage stakeholders in dialog; solicit feedback and input

HIGICC will communicate with its constituents through email, the website, newsletters, media releases and at meetings to keep them updated on significant achievements or setbacks. These will also be opportunities for stakeholders to provide feedback or even to join in the effort.

6 Appendix (Survey Results Summary)

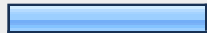
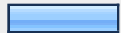
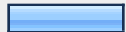



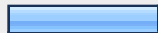
HIGICC GIS Strategic Plan Survey

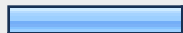
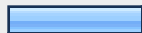



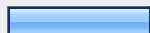
1. Please, tell us about yourself.			
		Response Percent	Response Count
Name:	<input type="text"/>	100.0%	112
Agency:	<input type="text"/>	100.0%	112
Department (optional):	<input type="text"/>	67.0%	75
Title (optional):	<input type="text"/>	71.4%	80
Address:	<input type="text"/>	100.0%	112
City/Town/Village:	<input type="text"/>	100.0%	112
ZIP/Postal Code:	<input type="text"/>	100.0%	112
Email Address:	<input type="text"/>	100.0%	112
Phone Number (optional):	<input type="text"/>	58.9%	66
		<i>answered question</i>	112
		<i>skipped question</i>	0

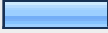

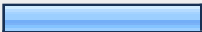

2. Which category best describes your agency?			
		Response Percent	Response Count
County		19.8%	22
Native Hawaiian		0.0%	0
State Agency		27.0%	30
Non-Military Federal Agency		13.5%	15
Military		7.2%	8
Education K-12		0.0%	0
College / University		7.2%	8
Utility		2.7%	3
Private Sector (e.g. Surveying/Engineering/Planning/Consulting)		20.7%	23
Non-Profit		1.8%	2
Other (please specify)			6
		answered question	111
		skipped question	1

3. How long has your agency been using geospatial technology/GIS?			
		Response Percent	Response Count
Not currently using GIS, no immediate plans		2.8%	3
Not currently using GIS, but plan to within the next year		2.8%	3
1-2 years		6.5%	7
2-5 years		15.7%	17
5-10 years		19.4%	21
>10 years		52.8%	57
		answered question	108
		skipped question	4

4. How many people (not software licenses) use GIS in your agency (including GIS staff and non-GIS staff)?			
		Response Percent	Response Count
0		4.5%	5
1		4.5%	5
2-5		30.0%	33
5-15		21.8%	24
15-50		17.3%	19
50-100		4.5%	5
>100		17.3%	19
		answered question	110
		skipped question	2

5. Does your agency have full-time GIS staff? If so, how many?			Response Percent	Response Count
No			30.0%	33
1			16.4%	18
2			17.3%	19
3			10.0%	11
4			1.8%	2
5			1.8%	2
> 5			22.7%	25
			answered question	110
			skipped question	2

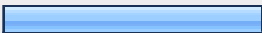



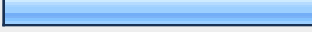

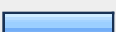
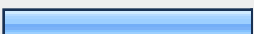
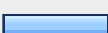

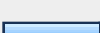
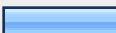
6. Not including staff, how much did your agency spend (approximate total of operational funds, grants, CIP, etc) on GIS/geospatial during the last fiscal year?			Response Percent	Response Count
<\$5,000			26.6%	21
\$5,000-\$10,000			20.3%	16
\$10,000-\$25,000			10.1%	8
\$25,000-\$50,000			8.9%	7
\$50,000-\$100,000			12.7%	10
>\$100,000			21.5%	17
			answered question	79
			skipped question	33

7. How is your agency's GIS/geospatial activity funded (check all that apply)?			
		Response Percent	Response Count
Capital Budget		15.7%	13
Operating Budget		81.9%	68
Grants		30.1%	25
Service Fees		13.3%	11
		Other (please specify)	13
		answered question	83
		skipped question	29

8. Do you use outside GIS resources for technical support to assist in your agency's geospatial activities (check all that apply)?			
	Fee for Service	Free	Response Count
State GIS Program	1.8% (1)	98.2% (55)	56
County GIS Programs	0.0% (0)	100.0% (50)	50
Private Consultants/Engineering Companies	95.5% (42)	4.5% (2)	44
Fully outsourced to a third-party	87.5% (14)	12.5% (2)	16
Other	57.1% (8)	42.9% (6)	14
		If Other (please specify)	20
		answered question	80
		skipped question	32

9. What do you use GIS for in your agency?				
	Primary Use	Secondary Use	Do Not Use	Response Count
Parcel recording	35.2% (19)	25.9% (14)	38.9% (21)	54
Parcel tax assessment, valuation and equalization	23.1% (12)	23.1% (12)	53.8% (28)	52
Transportation planning and management	26.9% (14)	38.5% (20)	34.6% (18)	52
Economic development	13.5% (7)	55.8% (29)	30.8% (16)	52
Historic Preservation	31.5% (17)	31.5% (17)	37.0% (20)	54
Environmental	60.0% (48)	32.5% (26)	7.5% (6)	80
Energy Efficiency	10.2% (5)	30.6% (15)	59.2% (29)	49
Health	6.5% (3)	30.4% (14)	63.0% (29)	46
Education	23.5% (12)	41.2% (21)	35.3% (18)	51
E911, emergency planning	34.6% (18)	25.0% (13)	40.4% (21)	52
Wireless Communication	6.5% (3)	15.2% (7)	78.3% (36)	46
Hurricane Inundation	20.0% (11)	47.3% (26)	32.7% (18)	55
Infrastructure mapping/asset management	63.9% (46)	26.4% (19)	9.7% (7)	72
Planning	74.4% (58)	20.5% (16)	5.1% (4)	78
Military	30.0% (15)	12.0% (6)	58.0% (29)	50
3D Modeling	19.0% (11)	56.9% (33)	24.1% (14)	58
Scenario Modeling	23.2% (13)	48.2% (27)	28.6% (16)	56
			Other (please list below)	24
			answered question	101
			skipped question	11

10. What are your major challenges or barriers to increasing use of GIS in your agency? Please check up to the 5 most important that apply.

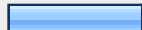
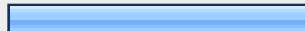

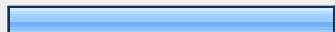




		Response Percent	Response Count
Data availability		39.8%	41
Cost of data collection		34.0%	35
Data sharing issues		34.0%	35
Need more GIS staff		41.7%	43
Need more GIS training		47.6%	49
Need technical assistance		28.2%	29
Problems acquiring appropriate software		16.5%	17
Lack of adequate or stable funding		37.9%	39
Lack of executive management support		15.5%	16
Lack of support from elected officials		8.7%	9
GIS not viewed/used as a necessary technology		14.6%	15
Other (please list below)		17.5%	18
		<i>answered question</i>	103
		<i>skipped question</i>	9


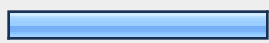
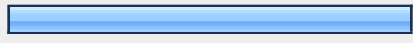
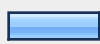

11. Which GIS/geospatial software does your agency use? Please estimate the number of licenses that your agency maintains.

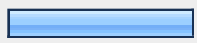
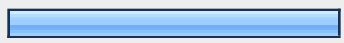
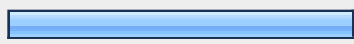
	1	2-5	6-10	>10	Don't know	Response Count
ESRI ArcView	18.5% (15)	21.0% (17)	14.8% (12)	35.8% (29)	9.9% (8)	81
ESRI ArcEditor	22.9% (11)	25.0% (12)	2.1% (1)	31.3% (15)	18.8% (9)	48
ESRI ArcInfo	21.9% (16)	26.0% (19)	15.1% (11)	27.4% (20)	9.6% (7)	73
ESRI Server (e.g. ArcIMS, ArcGIS Server)	41.2% (21)	21.6% (11)	5.9% (3)	15.7% (8)	15.7% (8)	51
Autodesk desktop (e.g. AutoCAD)	5.9% (2)	26.5% (9)	17.6% (6)	14.7% (5)	35.3% (12)	34
Autodesk server (e.g. MapGuide)	0.0% (0)	21.4% (3)	0.0% (0)	0.0% (0)	78.6% (11)	14
Caliper (e.g. Maptitude)	9.1% (1)	0.0% (0)	0.0% (0)	0.0% (0)	90.9% (10)	11
Clark Labs (e.g. IDRISI)	25.0% (3)	0.0% (0)	8.3% (1)	0.0% (0)	66.7% (8)	12
GE Energy (e.g. SmallWorld)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100.0% (9)	9
Google Earth	17.2% (11)	20.3% (13)	12.5% (8)	28.1% (18)	21.9% (14)	64
Intergraph desktop (e.g. GeoMedia)	7.7% (1)	15.4% (2)	7.7% (1)	7.7% (1)	61.5% (8)	13
Intergraph server (e.g. GeoMedia WebMap)	0.0% (0)	9.1% (1)	0.0% (0)	9.1% (1)	81.8% (9)	11
Manifold	9.1% (1)	0.0% (0)	0.0% (0)	0.0% (0)	90.9% (10)	11
MapInfo desktop	9.1% (1)	9.1% (1)	0.0% (0)	0.0% (0)	81.8% (9)	11
Mapinfo server (e.g. MapXtreme)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100.0% (9)	9
Microsoft Virtual Earth	5.0% (1)	25.0% (5)	5.0% (1)	20.0% (4)	45.0% (9)	20
Open Source desktop (e.g. UDIG)	23.1% (3)	0.0% (0)	0.0% (0)	7.7% (1)	69.2% (9)	13
Open Source server (e.g. MapServer, GeoServer)	9.1% (1)	9.1% (1)	0.0% (0)	0.0% (0)	81.8% (9)	11
Other (please list below)						18
answered question						100
skipped question						12


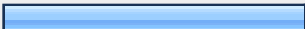
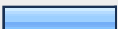
12. Which database software does your agency use for GIS/geospatial (check all that apply)?

		Response Percent	Response Count
ESRI ArcSDE	<input checked="" type="checkbox"/>	55.3%	47
Microsoft Access	<input checked="" type="checkbox"/>	61.2%	52
SQL Server	<input checked="" type="checkbox"/>	29.4%	25
Oracle	<input checked="" type="checkbox"/>	29.4%	25
Oracle Spatial	<input type="checkbox"/>	5.9%	5
My SQL	<input type="checkbox"/>	5.9%	5
PostGIS / PostgreSQL	<input type="checkbox"/>	3.5%	3
Other (please specify)	<input type="checkbox"/>	4.7%	4
		<i>answered question</i>	85
		<i>skipped question</i>	27

13. Does your agency use GPS and GIS/geospatial field software (check all that apply)?			
		Response Percent	Response Count
None		20.2%	19
ESRI, ArcPad		45.7%	43
FieldWorker		0.0%	0
MapFrame, FieldSmart		0.0%	0
MapInfo, MapXtend		1.1%	1
Pocket Systems, PocketGIS		0.0%	0
Trimble, TerraSync		50.0%	47
Leica GPS		4.3%	4
Topcon GPS		2.1%	2
Yes, don't know brand names		9.6%	9
Other (please specify)		10.6%	10
		<i>answered question</i>	94
		<i>skipped question</i>	18

14. What type of Internet access does your agency have (check all that apply)?			
		Response Percent	Response Count
None		0.0%	0
Dial-up		2.9%	3
High Speed Broadband (Cable, DSL, etc.)		39.8%	41
Broadband Leased Line (T1, T3, etc.)		62.1%	64
WiFi		13.6%	14
Do not know		8.7%	9
		<i>answered question</i>	103
		<i>skipped question</i>	9

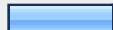
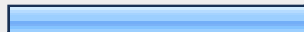
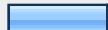

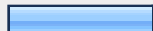
15. Does your agency maintain an intranet or Internet GIS web site (check all that apply)?			
		Response Percent	Response Count
None		28.0%	28
Internet (publicly available)		51.0%	51
Intranet (internal use only)		53.0%	53
		<i>answered question</i>	100
		<i>skipped question</i>	12

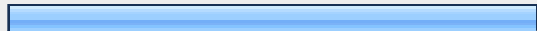
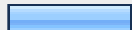
16. If you maintain an Internet/intranet GIS web-site, how is it hosted (check all that apply)?			
		Response Percent	Response Count
I don't know		36.6%	26
We host it ourselves		46.5%	33
We use third party hosting services		16.9%	12
		Other (please specify)	7
		<i>answered question</i>	71
		<i>skipped question</i>	41


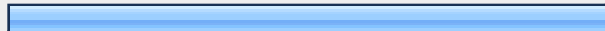
17. What type of training would be beneficial to your agency?					
	No Need	Low Need	Medium Need	High Need	Response Count
Introduction to GIS	19.8% (16)	21.0% (17)	29.6% (24)	29.6% (24)	81
Advanced GIS	6.2% (5)	13.6% (11)	49.4% (40)	30.9% (25)	81
Introduction to Web-based GIS Development	9.6% (7)	26.0% (19)	39.7% (29)	24.7% (18)	73
Advanced Web-based GIS Development	18.2% (12)	16.7% (11)	36.4% (24)	28.8% (19)	66
Introduction to Relational Databases	11.6% (8)	23.2% (16)	46.4% (32)	18.8% (13)	69
Data Creation: On Screen/Heads Up Digitizing	29.0% (18)	33.9% (21)	24.2% (15)	12.9% (8)	62
Data Creation: GIS Field Data Collection	17.8% (13)	27.4% (20)	37.0% (27)	17.8% (13)	73
Data Creation: Dynamic Segmentation	35.8% (19)	37.7% (20)	17.0% (9)	9.4% (5)	53
Data Creation: Address Geocoding	28.6% (18)	31.7% (20)	28.6% (18)	11.1% (7)	63
Data Management: Editing Geospatial Data	18.1% (13)	25.0% (18)	36.1% (26)	20.8% (15)	72
Data Management: Spatial Database Design	13.4% (9)	28.4% (19)	38.8% (26)	19.4% (13)	67
Data Management: Spatial Reference Systems and Design	22.0% (13)	39.0% (23)	23.7% (14)	15.3% (9)	59
Data Management: Editing and Manipulation of Attribute Tables	22.2% (14)	22.2% (14)	38.1% (24)	17.5% (11)	63
Analysis: Query and Selection	17.5% (11)	20.6% (13)	41.3% (26)	20.6% (13)	63
Analysis: Buffers, Clips, Overlays and Joins	22.6% (14)	19.4% (12)	41.9% (26)	16.1% (10)	62
Analysis: Raster Analysis	14.3% (9)	28.6% (18)	36.5% (23)	20.6% (13)	63
Analysis: Batch Processing/Model Building	17.7% (11)	22.6% (14)	40.3% (25)	19.4% (12)	62
Output: Map Making and Templates	11.8% (8)	25.0% (17)	32.4% (22)	30.9% (21)	68



Output: Cartography	13.8% (9)	26.2% (17)	30.8% (20)	29.2% (19)	65
Output: Using Report Generators	19.0% (11)	29.3% (17)	32.8% (19)	19.0% (11)	58
Other (please specify)					9
answered question					95
skipped question					17

18. In your opinion, what should the top priorities for HIGICC be?						
	HIGICC Top Priority	HIGICC Medium Priority	HIGICC Low Priority	N/A	Rating Average	Response Count
Data development	34.2% (26)	35.5% (27)	26.3% (20)	3.9% (3)	1.00	76
Data hosting	24.3% (18)	47.3% (35)	23.0% (17)	5.4% (4)	1.00	74
Standards development	48.8% (41)	39.3% (33)	9.5% (8)	2.4% (2)	1.00	84
Statewide GIS policy development	56.8% (46)	29.6% (24)	11.1% (9)	2.5% (2)	1.00	81
Statewide GIS strategic planning	69.1% (56)	19.8% (16)	8.6% (7)	2.5% (2)	1.00	81
Training	28.6% (24)	45.2% (38)	21.4% (18)	4.8% (4)	1.00	84
Workshops on special topics	37.6% (32)	50.6% (43)	9.4% (8)	2.4% (2)	1.00	85
Technical support	13.2% (10)	30.3% (23)	48.7% (37)	7.9% (6)	1.00	76
Funding and grants to support GIS	43.2% (35)	33.3% (27)	21.0% (17)	2.5% (2)	1.00	81
Geospatial application development	9.6% (7)	30.1% (22)	49.3% (36)	11.0% (8)	1.00	73
Application hosting	7.1% (5)	28.6% (20)	52.9% (37)	11.4% (8)	1.00	70
User groups support	39.5% (32)	34.6% (28)	22.2% (18)	3.7% (3)	1.00	81
Online forum for collaboration	42.0% (34)	38.3% (31)	16.0% (13)	3.7% (3)	1.00	81
Comments						8
answered question						96
skipped question						16

19. How would you rate the overall performance of HIGICC?			
		Response Percent	Response Count
Excellent		15.8%	15
Good		45.3%	43
Fair		14.7%	14
Poor		2.1%	2
I am not aware of HIGICC		22.1%	21
Additional Comments			11
answered question			95
skipped question			17

20. HIGICC's mission statement is: "The mission of the HIGICC is to bring together and continue to build the geographic community into a cohesive, recognized coordinating body that facilitates the use, development, sharing, and management of geographic data and communicates the value of geographic information to citizens and decision-makers." Do you feel HIGICC is fulfilling its mission?			
		Response Percent	Response Count
Yes		81.3%	65
No		18.8%	15
Please explain			25
answered question			80
skipped question			32

21. Should the mission statement be revised?			Response Percent	Response Count
Yes			7.7%	6
No			92.3%	72
If yes, in what way?				8
			answered question	78
			skipped question	34

22. Do you have suggestions of activities that HIGICC has not done but should?			Response Percent	Response Count
Yes			29.6%	21
No			70.4%	50
If yes, please explain				22
			answered question	71
			skipped question	41

23. Currently the Hawaii GIS Coordinating Council (HIGICC) Board of Directors is made up of representatives from the following sectors: Private Sector (4), University (1), Federal Government (2), State Government (2), County Government (2). Are there other stakeholders that you feel should be represented in the Council? If yes, please provide details.			Response Count
			19
			answered question
			19
			skipped question
			93

24. If you are not currently a member of HIGICC, what would motivate you to join?		Response Count
		22
	<i>answered question</i>	22
	<i>skipped question</i>	90



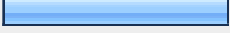
25. Please rate the importance of the following data sets to your agency:					
	Never Use	Rarely Use	Use Occasionally	Use Regularly	Response Count
Administrative boundaries (state, county, legislative districts, etc.)	2.1% (2)	5.3% (5)	23.4% (22)	69.1% (65)	94
District boundaries (school, fire, voting, utility, planning, etc.)	4.4% (4)	19.8% (18)	31.9% (29)	44.0% (40)	91
Elevation (contours, digital elevation models, LiDAR, etc.)	0.0% (0)	7.6% (7)	20.7% (19)	71.7% (66)	92
Geodetic control (e.g. survey markers, etc.)	7.9% (7)	20.2% (18)	34.8% (31)	37.1% (33)	89
Hydrography (surface water, streams, ponds, watersheds, etc.)	0.0% (0)	8.6% (8)	30.1% (28)	61.3% (57)	93
Zoning	3.2% (3)	11.8% (11)	28.0% (26)	57.0% (53)	93
Land use	1.1% (1)	16.3% (15)	18.5% (17)	64.1% (59)	92
Land cover (e.g. vegetation)	6.6% (6)	17.6% (16)	30.8% (28)	45.1% (41)	91
Street centerlines	10.9% (10)	12.0% (11)	19.6% (18)	57.6% (53)	92
Other transportation (e.g. airports)	14.6% (13)	22.5% (20)	30.3% (27)	32.6% (29)	89
Address points (specific X,Y location of individual addresses)	16.3% (15)	22.8% (21)	30.4% (28)	30.4% (28)	92
Utilities (e.g. electric, pipelines, sewer, water distribution, stormwater, etc.)	10.9% (10)	17.4% (16)	29.3% (27)	42.4% (39)	92
Parcels and Land ownership	3.2% (3)	4.2% (4)	23.2% (22)	69.5% (66)	95
Demographic data	11.4% (10)	36.4% (32)	30.7% (27)	21.6% (19)	88

Critical facilities and infrastructure (e.g. hospitals)	12.9% (12)	32.3% (30)	30.1% (28)	24.7% (23)	93
Hazards (e.g. faults, floodplains, hazardous waste)	7.4% (7)	19.1% (18)	34.0% (32)	39.4% (37)	94
Geographic names	1.1% (1)	15.1% (14)	36.6% (34)	47.3% (44)	93
Agricultural Lands	8.7% (8)	18.5% (17)	35.9% (33)	37.0% (34)	92
Natural Resources (Land)	6.6% (6)	16.5% (15)	27.5% (25)	49.5% (45)	91
Natural Resources (Marine)	15.6% (14)	31.1% (28)	21.1% (19)	32.2% (29)	90
Nautical Data	25.0% (21)	34.5% (29)	22.6% (19)	17.9% (15)	84
				Other (please specify)	11
				<i>answered question</i>	95
				<i>skipped question</i>	17

26. Please identify the source (s) for the following data sets used by your agency (check all sources that apply):

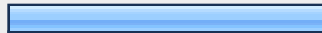
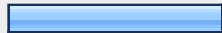
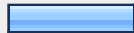
	Do NOT use	Use County Data Source	Use State Data Source	Use Federal Data Source	Use Commercial Data Source	Collected Data	Other	Do Not Know
Administrative boundaries (state, county, legislative districts, etc.)	2.3% (2)	44.3% (39)	79.5% (70)	21.6% (19)	2.3% (2)	4.5% (4)	1.1% (1)	2.3% (2)
District boundaries (school, fire, voting, utility, etc.)	8.2% (7)	49.4% (42)	62.4% (53)	10.6% (9)	1.2% (1)	2.4% (2)	0.0% (0)	4.7% (4)
Elevation (contours, digital elevation models, LiDAR, etc.)	2.3% (2)	27.3% (24)	42.0% (37)	51.1% (45)	15.9% (14)	13.6% (12)	0.0% (0)	5.7% (5)
Geodetic control (e.g. survey markers, etc.)	13.9% (11)	10.1% (8)	25.3% (20)	48.1% (38)	3.8% (3)	10.1% (8)	0.0% (0)	10.1% (8)
Hydrography (surface water, streams, ponds, watersheds, etc.)	3.4% (3)	20.5% (18)	63.6% (56)	44.3% (39)	4.5% (4)	9.1% (8)	1.1% (1)	4.5% (4)
Zoning	5.7% (5)	60.9% (53)	46.0% (40)	4.6% (4)	0.0% (0)	3.4% (3)	0.0% (0)	4.6% (4)
Land use	4.6% (4)	33.3% (29)	62.1% (54)	14.9% (13)	2.3% (2)	6.9% (6)	0.0% (0)	5.7% (5)
Land cover (e.g. vegetation)	8.6% (7)	12.3% (10)	53.1% (43)	34.6% (28)	4.9% (4)	12.3% (10)	2.5% (2)	8.6% (7)
Street centerlines	10.7% (9)	61.9% (52)	38.1% (32)	8.3% (7)	4.8% (4)	7.1% (6)	0.0% (0)	7.1% (6)
Other transportation (e.g. airports)	11.4% (9)	27.8% (22)	51.9% (41)	16.5% (13)	0.0% (0)	7.6% (6)	1.3% (1)	12.7% (10)
Address points (specific X,Y location of individual addresses)	18.4% (14)	36.8% (28)	23.7% (18)	10.5% (8)	5.3% (4)	15.8% (12)	1.3% (1)	15.8% (12)
Utilities (e.g. electric, pipelines, sewer, water distribution, stormwater, etc.)	8.2% (7)	50.6% (43)	37.6% (32)	4.7% (4)	4.7% (4)	15.3% (13)	2.4% (2)	8.2% (7)
Parcels and Land ownership	2.2% (2)	73.0% (65)	39.3% (35)	6.7% (6)	3.4% (3)	6.7% (6)	1.1% (1)	3.4% (3)
Demographic data	14.7% (11)	12.0% (9)	38.7% (29)	48.0% (36)	2.7% (2)	4.0% (3)	0.0% (0)	9.3% (7)
Critical facilities and infrastructure (e.g. hospitals)	13.9% (11)	36.7% (29)	44.3% (35)	12.7% (10)	3.8% (3)	7.6% (6)	2.5% (2)	11.4% (9)


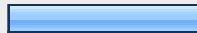

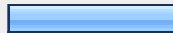

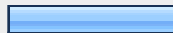
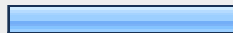
Hazards (e.g. faults, floodplains, hazardous waste)	7.4% (6)	24.7% (20)	46.9% (38)	45.7% (37)	2.5% (2)	4.9% (4)	2.5% (2)	9.9% (8)
Geographic names	3.7% (3)	31.7% (26)	64.6% (53)	40.2% (33)	4.9% (4)	11.0% (9)	3.7% (3)	3.7% (3)
	<i>answered question</i>							
	<i>skipped question</i>							

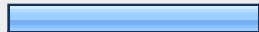
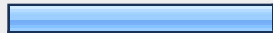
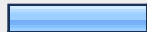
27. Has your agency acquired/created planimetric base mapping data for your area?			
		Response Percent	Response Count
Yes		23.7%	22
No (skip to question 30)		43.0%	40
Don't know		34.4%	32
		<i>answered question</i>	93
		<i>skipped question</i>	19

28. If you have acquired/created planimetric data, when was it created or last updated?		
		Response Count
		15
	<i>answered question</i>	15
	<i>skipped question</i>	97


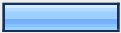






29. If you acquired/created planimetric base map data, how much did it cost to develop?		
		Response Count
		13
	<i>answered question</i>	13
	<i>skipped question</i>	99

30. Has your agency acquired/created digital orthophotography (aerial photos) for your area?			
		Response Percent	Response Count
Yes		48.4%	46
No (skip to question 32)		32.6%	31
Don't know		18.9%	18
<i>answered question</i>			95
<i>skipped question</i>			17

31. If you acquired/created digital orthophoto data, what is the pixel resolution?			
		Response Percent	Response Count
3"		5.8%	3
6"		28.8%	15
0.8'		5.8%	3
1'		25.0%	13
2'		11.5%	6
1M		25.0%	13
Don't know		34.6%	18
Other (please specify)			6
<i>answered question</i>			52
<i>skipped question</i>			60

32. Has your agency aquired/created LIDAR data for you region?			
		Response Percent	Response Count
Yes		38.5%	35
No (skip to question 34)		40.7%	37
Don't know		20.9%	19
		<i>answered question</i>	91
		<i>skipped question</i>	21




33. If you acquired/created LIDAR data what is the resolution of the data?

		Response Percent	Response Count
1 meter posting		25.0%	10
2 meter posting		17.5%	7
2.5 meter posting		2.5%	1
5 meter posting		5.0%	2
10 meter posting		2.5%	1
20 meter posting		0.0%	0
30 meter posting		0.0%	0
1 foot posting		5.0%	2
2 foot posting		5.0%	2
5 foot posting		0.0%	0
10 foot posting		0.0%	0
20 foot posting		0.0%	0
Don't know		47.5%	19
	Other (please specify)		2
	answered question		40
	skipped question		72

34. How would you rate the accuracy of the parcel data available for your region?			
		Response Percent	Response Count
1 – Excellent (e.g. coordinate geometry tied down to section corners)		5.2%	5
2 – Very good (e.g. overlays with digital orthophotography without obvious errors)		9.4%	9
3 - Good		38.5%	37
4 – Fair (e.g. overlays with digital orthophotography but shows many errors)		21.9%	21
5 – Poor (e.g. unknown origin, observed problems with accuracy)		7.3%	7
Don't know		17.7%	17
		answered question	96
		skipped question	16

35. Does your agency create metadata for your data?			
		Response Percent	Response Count
Yes, all		15.5%	15
Yes, most		26.8%	26
Yes, some		37.1%	36
No		9.3%	9
Don't know		11.3%	11
		answered question	97
		skipped question	15

36. Please provide any additional written feedback that you would like considered in the HIGICC's GIS/geospatial Strategic Plan:		
		Response Count
		12
	<i>answered question</i>	12
	<i>skipped question</i>	100

37. Would you like to be added to the HIGICC mailing list?			
		Response Percent	Response Count
Yes		39.6%	38
No		4.2%	4
Already on the list		57.3%	55
		<i>answered question</i>	96
		<i>skipped question</i>	16

Please provide any additional written feedback that you would like considered in the HIGICC's GIS/geospatial Strategic Plan:

- 1 Thanks for the hard work of the volunteer board and active participants!
- 2 What is the goal of the Strategic Plan?
- 3 mahalo for your consideration
- 4 HIGICC has helped agencies in the State to acquire GIS data. As a coordinating voice for these agencies, it has been able to accomplish tasks on a larger scale which would not necessarily be possible by an individual agency. If this approach could be expanded it would be helpful to all member agencies.
- 5 Have a website on all the links to acquire data from all available sources.
- 6 Acquire high quality data sets in conjunction with others ... elevation, at least 1-2 centimeter aerial imagery good enough to id plants and georectify parcel map to at least 1ft imagery map currently available.
- 7 I think that perhaps the bylaws, which set forth representation, voting, fiscal year, etc., should be reviewed. They should also be reviewed for compliance with current state and federal laws.
- 8 The long term health and security of Hawaii is directly tied to our ability to understand, manage and protect our environment. GIS is a vital component to a sustainable economy and healthy environment. Aloha O.S.!
- 9 HIGICC needs to find ways to engage with greater communities, including academia (both faculty and students), the military, the survey/engineering and planning businesses.
- 10 I think the GIS community in Hawaii should go back and reconsider whether there is still a need for the HIGICC. The State should also consider whether to bring back the State Mapping Advisory Committee to act in parallel to the HIGICC.
- 11 HIGICC sends us an occasional email, but has little influence on work done in the USGS-BRD office.
- 12 Recently the USGS gave a load of historic arial imagery to the UHM-map room, now the imagery cannot be searched except by map-room staff. what can be done to get these images into flight lines, chronologically, and rectified as we did in the past working with Benton Ching/USACE and others?