# CALIFORNIA GIS STRATEGIC PLAN PHASE 2:

REGIONAL PARTICIPATION

CREATING A CALIFORNIA
SPATIAL DATA INFRASTRUCTURE

May 2008

CALIFORNIA GIS COUNCIL

CGIA
CALIFORNIA GEOGRAPHIC
INFORMATION ASSOCIATION

Baker

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California GIS Strategic Plan Phase 2: Regional Participation

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1. Executive Summary

Introduction

The Phase 2 California GIS Strategic Plan is designed to build upon the Phase 1 Plan, published on September 20, 2006. The Phase 1 Strategic Plan identified the vision:

> Creation of a California Spatial Data Infrastructure managed by a central coordinating entity which supports and empowers projects and initiatives using location-based information for improved quality of life for all of California.

At the completion of Phase 1 the need for regional participation was identified. An FGDC Fifty States CAP Grant was applied for and awarded to California to obtain feedback from the sixteen Regional Collaboratives to supplement the Phase 1 volunteer effort.

Michael Baker Jr., Inc. (Baker), working closely with representatives from the California GIS Council (CGC) and the California Geographic information association (CGIA), developed a Regional Collaborative Participation plan to maximize regional participation while working within CAP Grant funding constraints.

Strategic Plan Methodology

Five primary forms of regional participation and data collection were conducted:

> Outreach 1: Validation of primary point-of-contact with each Regional Collaborative and updated statewide register.

> Outreach 2: An online survey, distributed to each Regional Collaborative. 100% feedback was achieved.

> Outreach 3: Regional participation Workshops at seven regional locations. Broad outreach to the California geospatial community resulted in +100 participants that were not previously registered in the CGIA or CGC outreach lists.

> Outreach 4: An interactive web forum, designed to further explore concepts gained from the Workshops.

> Outreach 5: Present pre-final Plan and recommendations at CalGIS 2008 as a Live Forum for additional feedback.

Throughout this project, Baker and CGIA have made the Phase 2 project plan, pre-Workshop survey, workshop reports, post-Workshop web forum activities and findings transparent to the public. All content has been placed on the CGIA web site and will reside there after project completion. http://www.cgia.org/strategic-gisplanning.htm

Through all stages of the regional participation project the information collection was oriented around the National States Geographic Information Council (NSGIC) Strategic Planning Template and the four major topic areas in the template intended for Phase 2 focus:

> 1) Current Situation,
> 2) Requirements,

3) Organizational Needs, and

4) Implementation.

1) Current Situation

During the seven regional Workshops participants provided direct feedback on the perceived strengths, weakness, opportunity, and threats (barriers/constraints) facing California in the development of a Spatial Data Infrastructure. The feedback was generally categorized into the following four topic areas:

1. Communication/Participation,
2. Awareness/Education,
3. Data Sharing/Data Accuracy, and
4. Funding.

The following table represents a key regional collaborative item from the detailed SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis found in Section 3.3 of the Plan:

Figure 1: SWOT Analysis Highlights

Strengths	Weaknesses
▪ Regional Collaboratives: Good number of active Regional Collaboratives, a few established as non-profits to apply for, receive, and administer grant funding.	▪ Regional Collaboratives: Still a number of inactive Regional Collaboratives, within their region or at the state level, which will impede their responsiveness to a request to participate in the development of a CA-Spatial Data Infrastructure.
▪ Communication / Participation: Several counties have advanced to hire/designate GIOs and are actively engaged in local/ regional/ statewide activities.	▪ Communication / Participation: No formal communication channel between the Regional Collaboratives resulting in a number disconnected framework data development initiatives.
▪ Awareness / Education: Talented pool of existing geospatial practitioners and solid California geospatial academic programs to feed the workforce.	▪ Awareness / Education: Not enough communication between the producers of geospatial solutions and legislators, executives, and management at the city, county, regional, and state levels.
▪ Data Sharing / Data Accuracy: CaSIL serves as a good central repository for a small percentage of data that is uploaded. Informal data sharing across communities is strong.	▪ Data Sharing / Data Accuracy: With no statewide data model there is significant disparity on the quality of data and concern on data sharing liabilities.
▪ Funding: Established and active Regional Collaboratives with formal parent organizations and one 501(c)(4).	▪ Funding: Difficult to get grants for regional data development because of crossing political/administrative boundaries. There is frequently no one entity to receive and administer grants.

Opportunities	Threats (Barriers / Constraints)
▪ Regional Collaboratives: State representatives from the CGC and CGIA need to interact regularly with all Collaboratives to reinforce the established Regional Collaboratives and facilitate development and activity of those less active or developed.	▪ Regional Collaboratives: Some Regional Collaboratives who do not talk among themselves and do not participate in state meetings.
▪ Communication / Participation: Regionals identified that the State needs to articulate more clearly what their geospatial business objectives are and how the Regional Collaboratives can assist.	▪ Communication / Participation: Counties often have large departments that are responsible for specific datasets. These departments are not always involved in collaborative efforts. Its takes time to figure out who maintains and updates data and who is responsible for getting it to the next level.
▪ Awareness / Education: Educate elected officials to the business value of GIS; when to use GIS and how GIS is used. California needs a state designated advocate.	▪ Awareness/Education: The rise of consumer GIS has changed the expectations of users within an agency. This has led to more requirements on the GIS department but not always more funding.
▪ Data Sharing / Data Accuracy: Across the regions there is a common interest to find or create a best practices document on data sharing agreements.	▪ Data Sharing / Data Accuracy: There is often an unwillingness or inability within communities to share information centered on a lack of comfort with the currency and accuracy of data. There is a perceived liability.
▪ Funding: Grants and funding sources for framework data.	▪ Funding: Funding is not sustainable. Consistent lack of recurring funding. Sentiment that everyone wants data but no one is willing to fund.

2) Requirements

During the Pre-Workshop Survey, an inventory of existing data sets was collected using the core seven and California-centric eleven data themes prioritized in the "California Geospatial Framework Draft Data Plan".
http://www.cgia.org/geospatial-draftplan.htm
All regional collaboratives responded and the chart to the right depicts their initial feedback.

Figure 2: Available Datasets

Figure 2: Available Datasets — matrix of datasets (Cadastral, Ortho Imagery, Transportation, Elevation, Hydrography, Geodetic Control, Governmental Units, Street Addressing, Utilities, Public Land Conveyance Records, Buildings and Facilities, Flood Hazards, Vegetation, Biological Resources, Cultural and Demographic Statistics, Soils, Wetlands, Earth Cover) by region (Bay Area Regional, Central Coast, Channel Islands, Eastern Sierra, Far North Regional, Gold Country Regional, Humboldt Area, Mendocino-Lake Regional, North Valley Regional, Sacramento Regional, San Diego Regional, San Joaquin Valley Regional, San Luis Obispo Regional, Sierra Nevada Regional, SoCalGIS, SE California).

Figure 2:
Requirements Areas

For the purposes of this Plan we have captured regional feedback into four requirements areas: existing infrastructure, data sharing, technology, and data standards, as depicted in Figure 1. There was much discussion during the regional outreach workshops centered on the current and potential mechanisms for data sharing. While most Collaboratives responded positively toward data sharing, they still expressed concern about liability as it relates to data accuracy.

Even with the development of formal policy to encourage data sharing, there is still a significant challenge of integrating or consolidating datasets that are of different types, accuracy, or have different attributes. Today, there is no statewide data model that would allow communities to develop data with some consistency across political boundaries. Without an established data model or quality metadata, information will vary significantly. Regional Collaboratives expressed enthusiasm for a statewide data model, assuming the criteria did not affect the current datasets they have already developed. The Collaboratives' greatest concern for development of a statewide data model at this time is the far reaching effects these changes might have on already existing data models and technology.

Along with a statewide framework data model the Collaborative expressed a need for framework data best practices. Concurrent with this Phase 2 Strategic Plan project is an Imagery Business Plan and Best Practices Report initiative, prepared under a USGS grant administrated by CGIA. The purpose is to apply a business planning model to selected imagery acquisition projects of regional collaboratives, and use these case studies to develop and illustrate best practices.
For more information, see http://www.cgia.org/imagery-project.htm.

One of the most pressing questions when developing a statewide spatial data infrastructure is the design of the data aggregation model. Two options were presented during the Regional Collaborative Workshops to open the topic and gain regional feedback:

1. A federated data aggregation model - data sets hosted on servers at the regional level but compiled and presented as a statewide dataset through a web interface; or
2. A central data aggregation model - data hosted on servers at a central statewide location.

The workshop participants were oriented to the two models; however a more detailed analysis of these approaches is needed in a future strategic planning effort.

3) Organizational Needs

The development of a CA-SDI must work within the organizational structure of the state, regions, and counties. It is essential that there be executive support within both the regions and state for the development of successful and active statewide SDI. For the

purposes of this Plan we have captured regional feedback
on organizational needs into five organizational areas:
executive support, staffing, coordination & oversight,
budget requirements, and outreach & community
development, as depicted in Figure 2.

From a regional perspective most Collaboratives (85%)
felt the establishment of a Geospatial Information Officer
(GIO) was important and believed that GIO should be
place in the new office of the State's Chief Information

Figure 3: Organizational Needs

Officer (60%). Even in the absence of a GIO, they felt it
was critical for there to be an established, higher level position to administer grants and
ensure that resources are delegated to those areas that need them.

While the structure of state level executive support is critical, the Regional Collaboratives
felt it was more important that the seven prioritized coordination and oversight roles as
surveyed be supported by the Geospatial Information Office or a Geospatial Information
Officer:

1. Provide leadership in the development and sharing of geospatial data
2. Provide leadership in the development and sharing of geospatial web services and
   tool
3. Provide leadership in the establishment of GIS technology and data standards
4. Promote best practices for methods and procedures related to the use and
   development of geospatial data and geographic information systems
5. Coordinate appropriate use of GIS through outreach and networking of potential
   and expert users
6. Facilitate training for skills related to use and development of geospatial
   information and geographic information systems
7. Coordinate and administer grants related to geospatial information and geographic
   information systems

During the regional Workshops participants added additional areas of support that they
seek:

8. Act as Chief Marketing Director and know the client's business.
9. Standardize, coordinate, and streamline GIS in state agencies.
10. Assimilate local data to a statewide dataset.
11. Act as the authoritative verifier of the value and quality of data and use metadata
    to describe source and purpose.
12. Provide a "state seal of approval." This is low cost and provides tremendous value
    at the local level and can encourage maintenance of good data sets.
13. Coordinate the investment of State Agency dollars.
14. Prepare funding recommendations; stewardship/promotion of GIS.
15. Support of the California GIS Council for data development.
16. Provide architecture that allows local government to view data at a regional level.
17. Be active; do not watch from the sidelines.

4) Implementation Program

With the NSGIC Strategic Planning template as a guide we have refined the implementation section to better reflect the regional participation feedback that we have categorized into four components: Governance, Data, Finance, and Marketing.

Each of the components is critical for the development of a CA-SDI. Feedback collected during this phase of the strategic plan provided insight into how the counties envision the CA-SDI moving forward.

Figure 4: Implementation Categories

Currently, executive support to the California GIS community exists in the form of the California GIS Council (CGC) and the California Geographic Information Association (CGIA). These two organizations are working cooperatively to move California's geospatial community towards a CA-SDI.

Phase 3 of the Strategic Plan will assign action items to each element, and ensure that the requirements are moving forward to meet the needs of a CA-SDI.

Recommendations

Recommendations presented in the Plan are action items that both Baker and CGIA developed from Regional Collaborative input from the pre-workshop survey, the seven regional workshops, the post-workshop web forum, and the CalGIS 2008 Live Forum. The recommendations focus on the most salient Regional Collaborative input. The recommendations are not prioritized.

Governance (See Section 7.1.4)

GR1: CGIA to collaborate with Counties who have designated Geographic Information Officers to understand how they are organized, funded, and staffed.

GR2: CGC develop Regional Collaborative Coordination Criteria as a variation on the NSGIC State Coordinator nine coordinating criteria to evaluate Regional Collaboratives. The evaluation criteria will clarify how the CGC can assist each Collaborative.

GR3: CGIA to increase advocacy role of key California needs that the CGC is unable to promote.

GR4: CGC and CGIA to discuss, prioritize, and communicate the key GIO support areas that the Regional Collaboratives have requested assistance.

GR5: CGC and CGIA to continue promotion of a state Geospatial Information Office with a Geospatial Information Officer.

Data (See Section 7.2.5)

DR1: CGC and CGIA to collect/ review/ refine/ and distribute Data Sharing Best Practices template to Regional Collaboratives.

DR2: CGC and CGIA to re-evaluate functionality of CaSIL to load, discover, and download framework data.

DR3: CGC to evaluate, document, and promote the availability of state agency third party data licensing agreements.

DR4: CGC to form a Technology Work Group to investigate the most applicable distribution model for the CA-SDI data sets.

DR5: CGC to explore the use of GIS Centers and Academic Centers as data hosts.

DR6: CGC to vet the concept of libraries as historical geospatial data repositories to enable future temporal analysis.

DR7: CGC to pursue implementation of CA Geospatial Framework Data Plan prioritized data sets published in September 2006. Discussed approaches are 1) Following funding, begin development/compilation of a data set or, 2) Without funding prototype a small geographic area with most/all prioritized data sets.

DR8: CGC and CGIA promote educational sessions with the Regional Collaboratives and four California URISA Chapters on the Imagery Business Plan and Best Practices Report.

Finance (See Section 7.3.4)

FR1: CGIA to deliver additional Financial Sustainability education sessions, in collaboration with URISA chapters, throughout California.

FR2: CGIA, collaborating with the CGC, to apply for multiple 2009 FGDC CAP Grants to address initiatives as discussed in the April 2008 CA GIS Council meeting and captured in this Plan in Section 7.5 CalGIS 2008 Live Feedback Forum.

FR3: CGC to form an Infrastructure Work Group to develop concept of the CA-SDI framework data sets as a critical infrastructure necessary to meet numerous policy and business needs across California.

FR4: CGC and CGIA to form a Grant Work Group focused on identifying and applying for regional and state funding.

FR5: CGC and CGIA to evaluate how to obtain larger sustainable funding for the development/compilation of the CA-SDI.

Marketing (See Section 7.4.1)

MR1: CGC and CGIA work in cooperation to take the June 2008 Executive GIS Event to the Regional Collaboratives. The event is focused on the business value of GIS as opposed its value as a technology:
MORE THAN A MAP: HOW GOVERNMENT AGENCIES ARE COLLABORATING ON GEOGRAPHIC INFORMATION FOR BETTER PUBLIC SERVICES
A Safer California
A Growing California
A Healthy California
A Well Mobilized California
An Open California
A Greener California

MR2: CGC and CGIA interact with the four California URISA Chapters to increase awareness of the prioritized CA-SDI as published in the CA Geospatial

Framework Draft Data Plan in September 2006, and promote the recommendations in this GIS Strategic Plan Phase 2: Regional Participation.

MR3: CGC and CGIA to assess the value and ability of representatives to outreach to other relevant organizations to promote adoption of CA-SDI.

MR4: CGC and CGIA to re-assess, re-define, and re-promote CaSIL as the central repository to post, discover, and download CA-SDI data.

MR5: CGC and CGIA should update "The state of GIS in California" tri-fold annually in advance of the NSGIC annual conference and both email push and post to their respective web sites to increase the awareness of geospatial activity in California.

MR6: Develop and post on CGC and CGIA web sites geospatial contact directories:
1) Variation on the CGC Members list to show key GIS contact information per represented agency or entity.
2) Regional Collaborative contact list.
3) Evaluate re-instating an updated California-wide Geospatial Yellow Pages for all GIS practitioners

MR7: Create and maintain directory of geospatial-oriented academic programs on CGC and CGIA web sites.

2. Strategic Planning Methodology

The Phase 2 California GIS Strategic Plan is designed to build upon the Phase 1 Plan, published on September 20, 2006. The Phase 1 Plan was authored by a Strategic Planning Workgroup, composed primarily of volunteers from the California GIS Council and the California geospatial community. Both the original Phase 1 plan and this subsequent Phase 2: Regional Collaborative Participation plan utilize the National States Geographic Information Council's (NSGIC) Fifty States Initiative Strategic Plan Template.

CALIFORNIA **GIS** COUNCIL

California GIS Council

DRAFT

Phase 1 Strategic Plan:
Creating a California Spatial Data Infrastructure

September 20, 2006

Framework Data
Data & Map Catalogs
Standards
GIS & Map Services
Infrastructure

*Creating a California
Spatial Data*

Work in Progress Document Developed by
California GIS Council Strategic Planning Working Group
Highlighted sections are under development

The Phase 2 Plan builds upon the Phase 1 Draft by gathering critical input from California's sixteen Regional GIS Collaboratives and integrating this feedback into a comprehensive CA-SDI (California Spatial Data Infrastructure) Strategic Plan. This second phase began with Michael Baker Jr., Inc. (Baker), the California GIS Council (CGC) and the California Geographic Information Association (CGIA) thoroughly reviewing the Phase 1 document and identifying needs and requirements to move forward.
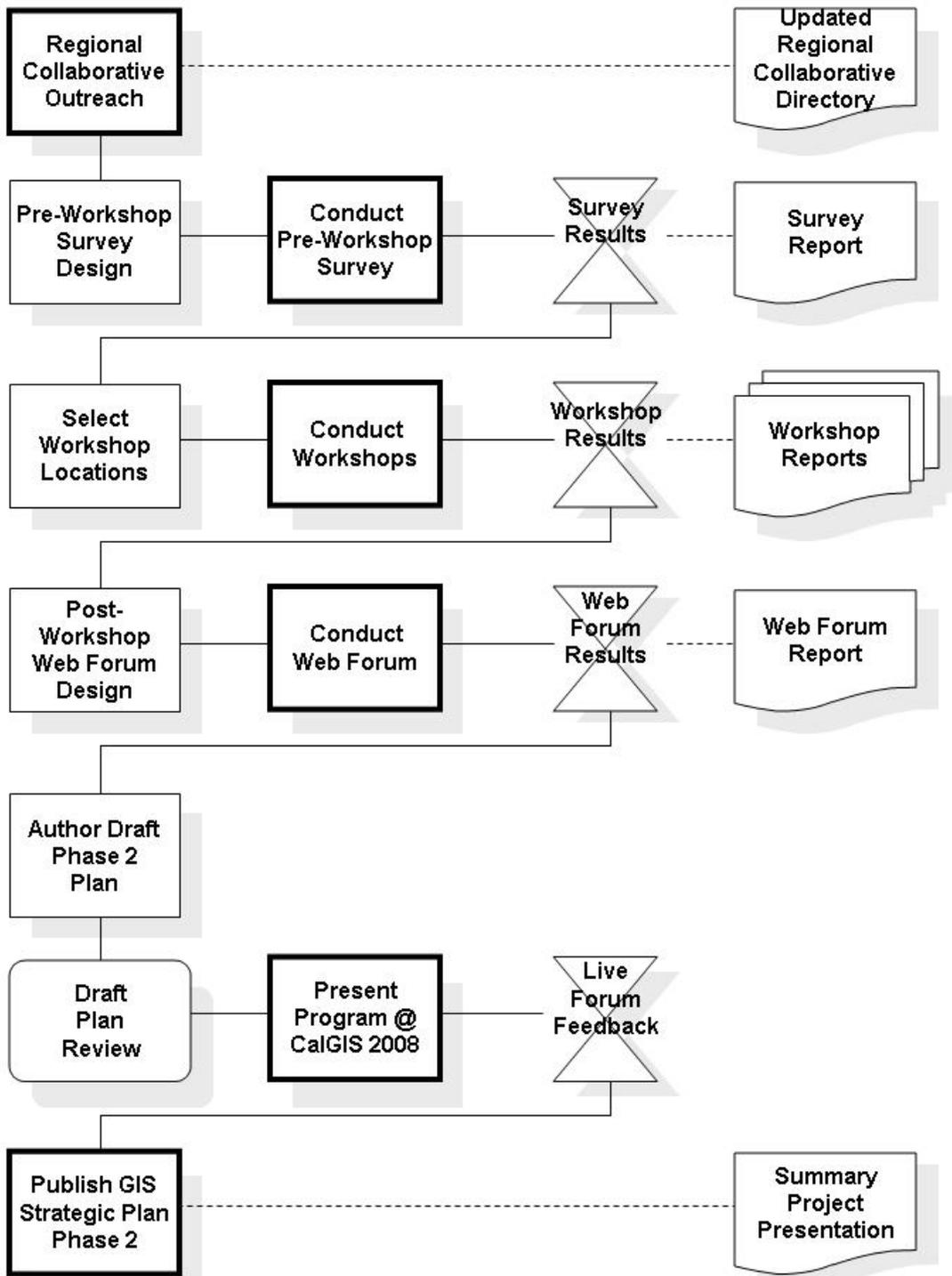
Figure 5: Phase 2 Strategic Plan Workflow

2.1 Preliminary Planning

Baker, working closely with representatives from the CGC and the CGIA, developed a Regional Collaborative Participation plan to maximize regional participation while working within CAP Grant funding constraints. This process began by identifying the current Regional Collaborative representatives and developing an updated contact list now available on the CGIA website. http://www.cgia.org/regional-directory.htm

Figure 6: Phase 1 GIS Strategic Plan Table of Contents

After initial communication with each Collaborative, a schedule of seven Regional Collaborative outreach meetings were developed and announced. Workshop locations were chosen to allow for the most inclusive coverage of the California Regional Collaboratives.

Five primary forms of regional participation and data collection were conducted:

Outreach 1. Validation of primary point-of-contact with each Regional Collaborative and update statewide register.

Outreach 2. An online survey, distributed to each Regional Collaborative. 100% feedback was achieved following a series of phone calls.

Outreach 3. Regional participation Workshops at seven regional locations. Communities were notified via the CGIA listserv and direct contact with each Regional Collaborative lead

Outreach 4. An interactive web forum, designed to further explore concepts gained from the Workshops.

Outreach 5. Present pre-final Plan and recommendations at CalGIS 2008 as a Live Forum for additional feedback.

Each primary form of regional participation was designed to ensure the most appropriate and complete feedback from every Regional Collaborative.

2.2 Strategizing

The establishment of a project timeline ensured that all tasks moved forward and remained on schedule. Project tasks were broken down into seventeen categories (See Table 3). The first project kickoff meeting was held in August, 2007 and Phase 2 of the strategic plan was published in April, 2008.

Figure 7: Project Timeline
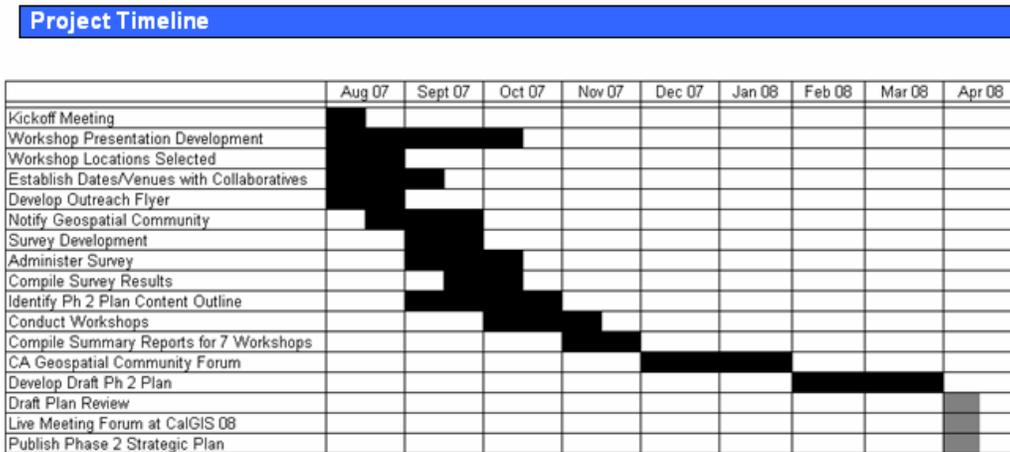
In the NSGIC Strategic Plan Template (March 2006), an emphasis is put on coordination amongst stakeholders and external authorities during the development of a statewide SDI (section 5.6.2). Eleven stakeholder groups are identified including municipal, county, state, tribal and federal regional government agencies (or their equivalents); regional planning organizations, non-profit organizations, utilities, private business, academia, and the public. The seven scheduled regional outreach meetings were designed to include representatives from most, if not all of the eleven stakeholder groups.

Outreach 1: Initial Regional Collaborative Validation
Initially each Regional Collaborative was contacted to verify the primary point-of-contact. The updated information was captured into an updated statewide register on the CGIA web site for ongoing reuse: http://www.cgia.org/regional-directory.htm

Outreach 2: Pre-Workshop Survey
Prior to the scheduled outreach meeting, basic information was collected in the form of an online survey (see Appendix A). All sixteen Regional Collaboratives were contacted to ensure a 100% response rate. These surveys collected information related to:

1. Regional Organizational Capacity
2. Spatial Data Infrastructure (SDI)
3. SDI Implementation

The results were made available online through the CGIA website (http://www.cgia.org/strategic-gisplanning.htm) and during the outreach Workshops.

Outreach 3: Workshops
The coordination and scheduling of the outreach Workshops was done with the help of a representative from each of the nearby Regional Collaboratives. An informational handout and flyer with the schedule and location of the meetings was distributed statewide and announced via the CGIA listserv. Appropriate attendance at every meeting was strong, ranging from 10 participants in Ventura to 29 participants in Sacramento. Representation ranged from local government to private industry. Following each workshop, a workshop summary report was published on the CGIA website.

Figure 8: Workshop Flyer and Schedule

Figure 9: Post-Workshop Web Forum Directory

Outreach 4:
Post-Workshop Web Forum
At the completion of the seven workshops, an interactive web forum was made available to solicit additional feedback, clarification, or opinions. Questions were structured around the three themes outlined earlier:

1. Regional Organizational Capacity

2. Spatial Data Infrastructure (SDI)

3. SDI Implementation

Outreach 5: CalGIS 2008 Live Forum
Presented pre-final Plan project approach and recommendations at CalGIS 2008 as a Live Forum for additional feedback. There were three Live Forum feedback sessions at the conference:

> 1. California Geographic Information Association Board Meeting.
>
> 2. California GIS Council meeting.
>
> 3. Conference peer-to-peer attendee presentation and facilitated feedback session.

All Regional Collaborative outreach feedback has been used to develop this Phase 2 Strategic Plan.

2.3 Authoring

Baker, working in cooperation with CGIA has prepared and analyzed the results of the pre-workshop survey, workshop interaction, and the post workshop web forum. Accompanying reports include a Pre-Workshop Survey Analysis Report and seven workshop summary reports. These reports have been made available to the public on the CGIA Website (http://www.cgia.org/strategic-gisplanning.htm). Community stakeholders have provided regular feedback during the data collection and report development process. This feedback has provided much of the content for this report.

2.4 Monitoring

Throughout this project, Baker and CGIA have made the Phase 2 project plan, pre-Workshop survey, workshop reports, post-Workshop web forum activities and findings transparent to the public. All content has been placed on the CGIA web site and will reside there after project completion. Regular feedback has been sought from involved stakeholders, and an effort has been made to solicit information from each of the sixteen Regional Collaboratives.

At the completion of the Phase 1 Plan, and during Phase 2 Regional Participation, it was anticipated that the Phase 3 Strategic Plan will focus on state and federal agency stakeholder support and feedback. The third phase concept requires additional discussion action in order to qualify for the application of a Federal Geographic Data Committee (FGDC) Cooperative Agreement Program (CAP) Grant in 2009. The Phase 1 and 2 planning initiatives will be utilized in the development of Phase 3.

3. Current Situation

3.1 Who are we?

Organizational Structure
The size and diversity of California contribute to the many challenges associated with the coordination, development and use of geospatial information. In an effort to overcome these challenges, California has defined a comprehensive network of Regional GIS Collaborative groups. These groups have taken the lead in establishing methods and data models for sharing framework geographic information across typical administrative boundaries. These regional groups serve as a model for further integration and coordination at the State level, providing an excellent opportunity to develop and evaluate best practices.
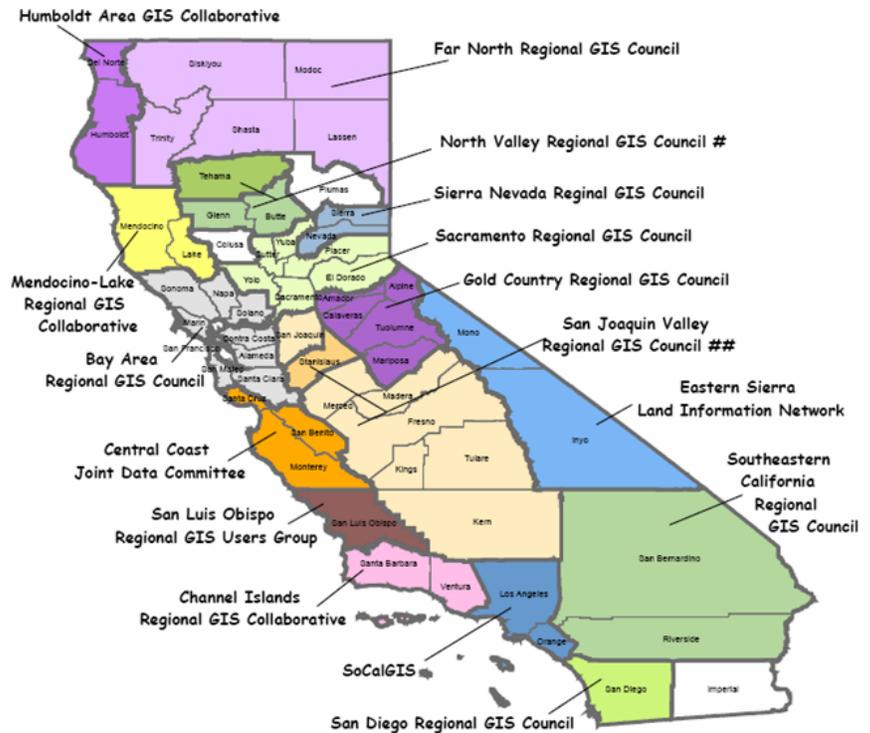
Figure 10: Regional Collaborative Map

The level of development of each Collaborative can range dramatically from minimal structure and participation, to a well developed organizational approach with goals, regular meetings, and established funding mechanisms. At the time of the Plan being published one of the Regional Collaboratives has created a mechanism to receive funding as a 501(c)(4) tax exempt organization, while others rarely meet or communicate at all. The level of organization and communication is most often directly proportional to the amount of activity and productivity.

Because of the large size and complexity of California as a state, it has been dependent upon the Regional Collaboratives and grassroots efforts to develop reliable data. Currently there is no state level central entity to govern GIS and spatial data infrastructure development, so much of the work has come from bottom up efforts.

On the state level, California has two primary statewide GIS coordination organizations, the California GIS Council (CGC) and the California Geographic Information Association (CGIA), that work together in mutual support toward common goals and objectives. The CGC provides leadership for increased coordination and is driving the strategic planning process for a Statewide Spatial Data Infrastructure that will support the National Spatial Data Infrastructure efforts. The CGC is a collaboration of federal, state,

regional, and academic institutions that guide statewide policy strategy for GIS data and services in California. CGIA is a private non-profit entity facilitating coordination, collaboration, and advocacy for California's GIS community. CGIA's activities have included coordinating implementation of statewide grants, policy and legislative advocacy, and outreach. CGIA has a board made up of City, County, Regional, State, Federal, Public Utilities, Education, Private Business, and Not-for-Profits/Professional Societies.

California's sixteen Regional GIS Collaboratives interact with the state through representation on CGC. The Regional Collaboratives provide leadership for geospatial coordination in California through their organizational entities and individual members. These members represent the many business needs for coordinated geospatial information in the state.

Stakeholders and Interests
California has a strong community of geospatial professionals who are actively involved in the strategic planning process. Representatives from all levels of government, academia, and the private sectors were present at the outreach meetings. During these workshops it was continually emphasized that the need and benefit of GIS reaches beyond geospatial professionals and touches a range of departments and agencies throughout the state.

Stakeholders are involved in a range of services that require quality geospatial data. Regional feedback confirmed that government agencies require GIS in many areas and for many purposes, including the following examples:

- Guarding against terrorism and criminal activities
- Emergency preparedness and response
- Planning strategic growth (e.g., San Joaquin Partnership)
- Planning and operating critical infrastructure
- Mitigating the affects of global warming (e.g., Delta Vision)
- Sustainable management of our natural resources
- Restoring and ensuring environmental quality
- Pandemic detection and response
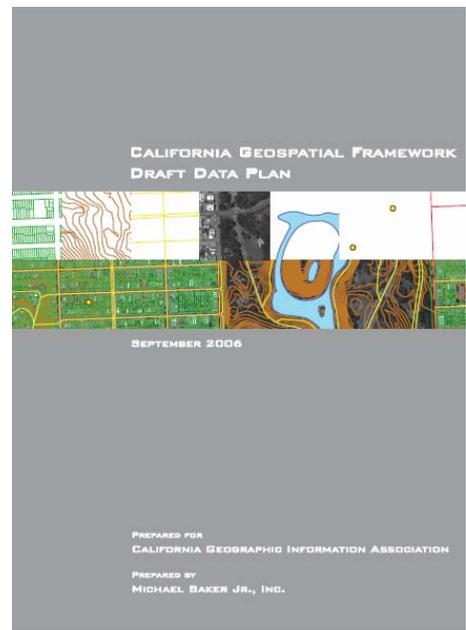
3.2 Where Are We Now?

The CA-SDI Strategic Planning Process
The goal of the CA-SDI Strategic Planning process is the development of a robust and efficient spatial data infrastructure that provides quality geospatial information, in support of improving the quality of life for all Californians. The process began with the development of a strategic planning work group in April 2006. The outcome of this

process was the Phase 1 California Strategic Plan which focused on the development of a California Spatial Data Infrastructure (CA-SDI). The Phase 1 Plan was a "work in progress" that framed the strategic planning effort and generated a methodology to begin the dialogue with representatives from state, federal, regional, and private sector groups and individuals.

In a parallel timeframe to the California Strategic Plan Phase 1, the state of California published a Statewide "Geospatial Framework Data Draft Plan." This Plan, funded by a CAP grant and USGS funds, prioritized seven core and eleven supplemental framework data sets following a series of regional workshops and outreach.

Figure 11: SWOT Analysis

In each of the seven Workshops, attendees participated in a Strength/ Weakness/Opportunity / Threat [Barrier/Constraint] (SWOT) analysis. Each Collaborative identified areas where they have excelled, and areas where there is room to grow. There was significant overlap across workshops, with many comments repeated throughout the series of meetings. Below is an outline of the most frequent and recurring comments made by Regional Collaboratives.

3.3 Strengths, Weaknesses, Opportunities and Threats (Barriers/Constraints)

Figure 12: SWOT Analysis Summary

<table>
<tr><th colspan="2">Communication / Participation</th></tr>
<tr><th>Strengths</th><th>Weaknesses</th></tr>
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- CA GIS community has strength in numbers. There is broad reaching representation from county, city, state, and federal.
- Statewide participation in the development of Regional Collaboratives.
- Several counties have advanced to hire/designate GIOs which aid internal and external county coordination and management awareness about GIS programs.
- Published tri-fold on "The state of GIS in California" for NSGIC 2007 Conference.
- People talking about GIS as a business solution and not as a technology.

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- Inconsistency in communication across and within Regional Collaboratives.
- Too many disconnected data development initiatives.
- Hard to determine the GIS representative for an area, and there is not always a representative or direct contact with the State.
- No clear communication regarding what the state wants from local governments.
- There are counties not included in an established Regional Collaborative.
- No incentives for regions to participate at state level.

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<tr><th>Opportunities</th><th>Threats (Barriers / Constraints)</th></tr>
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<td>

- State needs to clearly articulate their geospatial business needs and how the Regional Collaboratives data would help meet a given need. The Collaboratives could then respond and provide feedback.
- Regional Collaboratives conduct goal-oriented meetings with the state government that would advance both interests. This is best pursued by CA GIS Council and CGIA.
- Regional Collaboratives confirmed that they would participate in collaboration efforts if another state entity or individual assumed the organizational role.
- Identify talking points of GIS to solve business solutions.
- Create (resurrect) the concept of a GIS Yellow Pages of state resources.
- Have city/cities representation on CA GIS Council.

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- Within large Counties data development is frequently developed at a department level. The county department may not be aware of or share data and beyond the county the data is unknown.
- The wide use of web-based map display (Google, Yahoo, Mapquest…) has set unrealistic management expectations that the framework data is all developed and readily available, or could quickly (low cost/ low effort) be created.

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Awareness / Education

Strengths	Weaknesses
• California has the largest investment in GIS of any state and the majority of local governments are adopting this technology. • Consumer GPS and virtual map and virtual globe use have advanced the public's awareness/recognition of GIS. • There are many well established GIS staff working locally and regionally. • Many local colleges have good GIS educational programs.	• Not enough communication between the GIS professional community and academia. • Not enough communication between the producers of geospatial solutions and legislators - at the city, county, regional, and state levels. • Not enough communication between the producers of geospatial solutions and executives and mangers. • Beyond formation of Regional Collaboratives there has been no regional direction by the CGC; no communication on vision of success and next steps.

Opportunities	Threats (Barriers / Constraints)
• Educate elected officials and management on GIS, how GIS is used, and the business value. • Need for someone at the top to advocate GIS and all of its benefits. Official representative who can "walk softly and carry a big laptop" at high levels. • Need for a website to publicize geospatial information related to both CA and the regions. • Promote GIS awareness among funders. Currently, funders see this technology as something extra and not a critical element to the advancement of each department. • Libraries were identified as a good historical data repository. Tremendous value in holding historical data for comparisons. • Belief that vast amounts of framework data sets exist and are not known. Populate and promote authorative central repository. • CGC should be more visible. "If you don't see them, you don't know them, so you don't care about them".	• There exists an "organizational or public ignorance" of the capabilities of GIS. • Staff retirement has become a threat. Large portions of the workforce are reaching retirement age and staff retention can be a challenge. • Rise of consumer GIS has changed the expectations of users within an agency. This has led to more requirements on the GIS department but not always more funding.

Data / Data Sharing / Data Accuracy

Strengths	Weaknesses
• Many framework data development efforts are in place statewide. • Informal data sharing across communities is common. • There is a central repository, CaSIL, that makes data accessible. • Availability of Best Practices at local, regional, other states, and national are available to state.	• Concern about a lack of data quality and consistent standards. • Confusion and a lack of information regarding the liability of data sharing. • CaSIL hosted data is often dated, and not accurate or detailed enough for many needs. • Many communities share data but have no formal data sharing agreements. • Regional data sharing collaboration is difficult because the data attributes are not standardized. It is hard to integrate the data. • Hard to find public domain framework data.
Opportunities	**Threats (Barriers / Constraints)**
• Desire to find or create a best practices document on data sharing agreements. This information often is lost when people leave an organization. • Create the prioritized framework data sets. This requires an understanding that there are accuracy and liability concerns on the local and regional source data. By accepting a broad range of data types and qualities data development can proceed. • Counties would like a master address database. There is currently no single database that has all valid addresses in most jurisdictions. • Promote CaSIL to meet need for a central library of available framework datasets. • Find a trigger to initiate coordination between Regionals and the state. For example a short-term emergency response trigger or a long-term trigger such as pesticide impact on public health. • Develop a US Census Bureau-like web interface of data lists and download capability. • The National Map and a CA-SDI should be targets for data sharing. County/regional framework data should be built to be shared.	• Often an unwillingness or inability within communities to share information. This unwillingness is centered on a lack of comfort with the currency and accuracy of data. There is a perceived liability with an increase in consumer GIS. • Many critical datasets are created at the local level. Filtering them up to the state could/will be a challenge due to inconsistencies such as data standards. • Regional collaboratives and state agencies licensing third party data. Varying levels of restrictions on further sharing of data. • Informal data sharing agreements are a reaction to the level of effort to create formal data sharing agreements or memorandum of understandings. • Any time you create a common data set that is shared through a public portal, there is a possibility that people will degrade the accuracy. There need to be rules of how this resource is maintained and who contributes. • There is no state data model to build upon. • Currently no identified process or target location for regional framework data storage.

Funding	
Strengths	**Weaknesses**
• One Regional Collaborative is able to obtain and distribute funds as a 501(c)(4). • The BAR-GC has aligned itself with ABAG and as such can receive and administer funds for the collaborative.	• Funding and resource impact are an issue in every region. • Ability to leverage federal funding needs to be greatly improved. • Difficult to get grants for regional data development because of the boundaries. There is no grant entity, so they can't receive and administer grants. • No funds for regional data creation. Counties need only surrounding counties buffer extent not entire county. • State funding [Caltrans cited] goes to COGs and not those who build and sustain data. • Perception that GIS is expensive. Counter argument is that is a small percentage of a capital improvement project.
Opportunities	**Threats (Barriers / Constraints)**
• Financial resources and grants are available if a mechanism to administer funds can be determined. • Hire a grant writer to gain funding for framework data initiatives. • Capital bond funds have been obtained to build state infrastructure. Building framework data sets as a critical infrastructure should be funded in a similar fashion. • Leverage GIS more to influence policy. • Funding is critical and GIS is not just fly-thru's and map creation. • Belief that a senior advocate of GIS and business solutions will contribute to increased funding. • At least one county's goal is to be financially self sufficient. Ventura hopes to act and operate like a business, and look for opportunities for revenue generation and cost sharing.	• Funding is not sustainable. Consistent lack of recurring year-to-year funding. • Money is the best incentive however there is the question of where the money will come from and where it will go. • There is very limited funding for regional efforts. Responsibility typically falls on the local governments. Everybody needs the data but nobody can pay. • Funding is going to require a lobbying effort at a state level. However, there's a perception that lobbying is not an acceptable activity for government employees. • Regional Collaboratives noted that State agencies will not build data, or fund building data, however they will license data. Does this support the development of a CA-SDI? • Duplication of building framework data. • One-off grant awards for initial data builds and deployment do not meet the long-term needs to keep the data and technology current.

4. Vision and Goals

4.1 Strategic Goals

The vision of this plan, as defined in the Phase 1 GIS Strategic Plan, is to develop a robust California Spatial Data Infrastructure managed by a coordinating entity which supports and empowers projects and initiatives using location-based information for improved quality of life for all of California. Responsibility for leading the coordination of the CA-SDI should be vested with a single entity in an appropriate institutional setting for optimal effectiveness. Figure 10 below depicts a candidate infrastructure model.
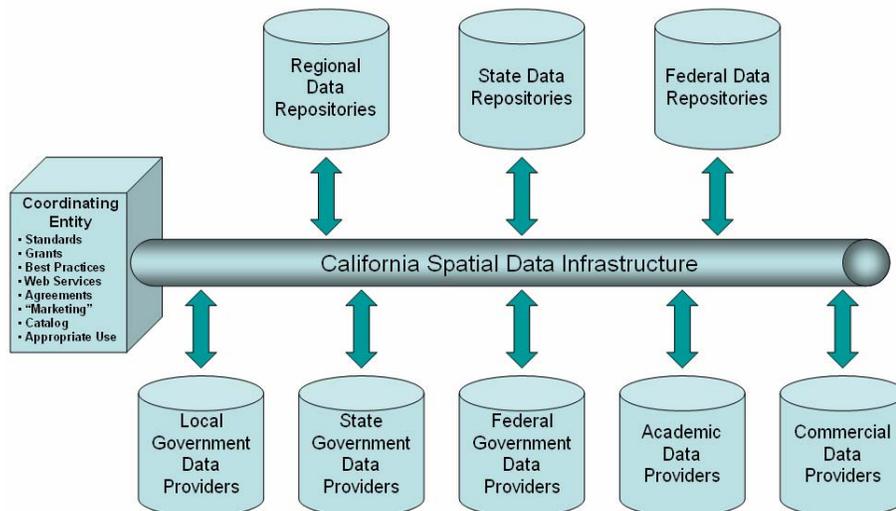
Figure 13: Sample Infrastructure Model

Coordination of Federated Participation for More Effective Geospatial Investments

This Phase 2 Plan initiative builds on the Phase 1 Draft by gathering critical input from California's sixteen Regional GIS Collaboratives and integrating this feedback into a comprehensive CA-SDI Strategic Plan. The second phase moves the Strategic Plan closer towards those goals laid out in the first Phase, specifically "to empower all levels of government to better meet citizen needs."

Phase 2 also emphasizes creating a strong nexus between building the framework data set outlined in the California Geospatial Framework Draft Data Plan and the concurrent Imagery Business Plan and Best Practices Report initiative.

Figure 14: Strategic Plan Phasing

Regional feedback collected during this process builds upon the initial goals set forth in the Phase 1 Strategic Plan. These goals include:

1. Development of the California Spatial Data Infrastructure (CA-SDI) – a shared data resource that will make the state's best cartographic data readily available to state agencies, municipal and county governments, federal partners and the private sector.

2. Establishment of a central coordinating entity to provide location-based (geospatial) data services to state agencies, municipal and county governments, federal partners and the private sector.

3. Broader expansion of Regional Collaborative groups and a broader inclusion of these regional groups into the planning, development, and implementation of this strategic plan.

Together, the overall vision of these initiatives will overcome existing vulnerabilities and support new services, providing significant value to a wide variety of stakeholders. It will ensure the inclusion of regional and local entities in the planning and development process. This enhanced statewide geospatial coordination, in combination with the new shared data resource, will allow California to leverage its significant existing investments. California can then deploy geospatial technology and data to support its many critical functions in the service of its populace and environment, including homeland security, emergency planning and response, smart growth, pandemic influenza surveillance, resource protection and environmental management.

4.2 Programmatic Goals

Moving forward towards a statewide Spatial Data Infrastructure, it is important to involve and learn from regional entities that have insight and resources to make progress.

Components of the California Spatial Data Infrastructure should include:

- Spatial Data Infrastructure core framework data
- Spatial Data Infrastructure California-centric framework data
- A central catalog of available data (metadata catalog)
- A data repository (either a centric or federated data model)

Development of a California SDI can benefit from Regional GIS Collaboratives that already have highly developed GIS regional services, data sharing agreements; data development plans, framework data, and shared purchases of imagery and other data. Structurally, some Collaboratives are a 501(c)(4) organization or official task committees of regional associations of governments, with the ability to receive and spend funds for GIS coordination in their areas. Some regions are past CAP grant recipients, many have full data sharing agreements, and one regional council (the Bay Area GIS Council) was the initial pilot project for the National Geospatial-Intelligence Agency Project Homeland effort. During the development of this Phase 2 Strategic Plan, and the ongoing process of developing a statewide SDI it is critical to continue the integration and communication process with these Regional Collaboratives.

5. Requirements

There are several fundamental requirements for the implementation of a CA-SDI. These requirements, when developed in close coordination with clear direction, will allow local and regional data to be compiled and presented to the public in a seamless manner. The requirements, outlined below, include:

- An appropriate data model (federated or centrally designed) that will host and maintain the necessary data;
- Proper legislation and a mechanism for data sharing across communities, counties, and regions; and
- Statewide data standards or guidelines that allow local and regional data to roll up into one, consistent and seamless dataset.

For the purposes of this Plan we have captured regional feedback into four requirements areas: existing infrastructure, data sharing, technology, and data standards, as depicted in Figure 12. These requirements are interdependent of each other, and must be developed in close coordination. Data sharing is dependent on a statewide data standard. Likewise, a data hosting structure is insufficient in the absence of a data sharing mechanism.
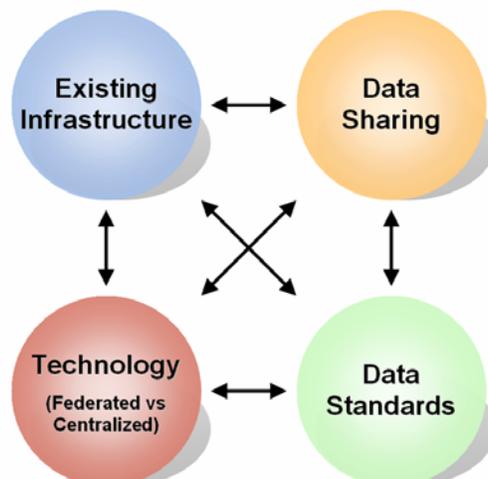

Figure 15: Requirements Areas

The sections below outline the regional perspective on these requirements, gained directly from the pre-workshop survey and the seven regional workshops.

5.1 Inventory of Existing Infrastructure and Suitability Assessment

During the pre-workshop survey, an inventory of existing data sets was collected using the core seven and California-centric eleven data themes prioritized in the "California Geospatial Framework Draft Data Plan". Each of the sixteen Regional Collaboratives was asked to provide feedback on the datasets they have produced or acquired. These results are best summarized in the accompanying tables (see Table 5 and Table 6). San Diego Regional Collaborative had the most datasets available (all 7 core, and 7 of the 11 California-centric) and ortho-imagery was the most widely available data with 7 of the Collaboratives identifying this dataset.

	Bay Area Regional	Central Coast	Channel Islands	Eastern Sierra	Far North Regional	Gold Country Regional	Humboldt Area	Mendocino-Lake Regional	North Valley Regional	Sacramento Regional	San Diego Regional	San Joaquin Valley Regional	San Luis Obispo Regional	Sierra Nevada Regional	SoCalGIS	SE California
Cadastral							■									
Ortho Imagery		■	■						■	■	■		■	■		■
Transportation							■			■	■					
Elevation										■	■	■				
Hydrography											■					
Geodetic Control											■					
Governmental Units		■				■	■			■	■		■			
Street Addressing			■				■			■						
Utilities																
Public Land Conveyance Records																
Buildings and Facilities			■													
Flood Hazards							■				■		■	■		
Vegetation											■					
Biological Resources											■					
Cultural and Demographic Statistics											■				■	
Soils											■					
Wetlands											■					
Earth Cover											■					

Figure 16: Available Framework Data Sets

	Bay Area Regional	Central Coast	Channel Islands	Eastern Sierra	Far North Regional	Gold Country Regional	Humboldt Area	Mendocino-Lake Regional	North Valley Regional	Sacramento Regional	San Diego Regional	San Joaquin Valley Regional	San Luis Obispo Regional	Sierra Nevada Regional	SoCalGIS	SE California
Cadastral			▨				▨									
Ortho Imagery		▨	▨						▨	█	▨		▨	▨		▨
Transportation							▨			█	▨					
Elevation										▨	▨	▨				
Hydrography										█	▨					
Geodetic Control											▨					
Governmental Units		▨				▨	▨			▨	▨		▨			
Street Addressing			▨				▨			█						
Utilities																
Public Land Conveyance Records																
Buildings and Facilities			▨													
Flood Hazards							▨				▨		▨	▨		
Vegetation											▨					
Biological Resources											▨					
Cultural and Demographic Statistics											█			▨		
Soils											▨					
Wetlands											▨					
Earth Cover											▨					

Figure 17: Available Framework Data Sets with Standards

Each Collaborative was then asked if any of the available datasets met any formalized standards (see Table 6). Only Sacramento and San Diego Regional Collaboratives had datasets built to regional standards. Additional information was gathered regarding accuracy, currency, and source for the data. Complete results can be found in Appendix A.

5.2 Data Requirements (Data Sharing)

There was significant discussion during the regional outreach meetings centered on the current and potential mechanisms for data sharing. The first step toward facilitating data sharing across political boundaries is an improved understanding of current policy and legal ramifications. While most Collaboratives responded positively toward data sharing, they still expressed concern about liability as it relates to data accuracy. Most communities felt challenged because they lack a formal mechanism for data sharing. Many local governments are overcoming their lack of this formal mechanism by creating informal agreements or "arrangements".

Even with the development of formal policy to encourage data sharing, there is still the challenge of integrating or consolidating datasets that are of different types, accuracy, or have different attributes. There is no set, statewide data model that would allow communities to develop data with some consistency across political boundaries. A more thorough discussion of data models follows in the next section.

Additional challenges arise when efforts expand beyond two or three communities and move towards the development of a regional or statewide integrated dataset. Local governments require data at a finer level of detail than states or regions. This presents challenges when state level data require accuracy or attributes that may differ from already developed local data. Other problems arise when the completeness of data between communities vary.

A tested example of data sharing at the state level is NC OneMap in North Carolina. This example presents local data that is stitched together at the borders creating the appearance of a cohesive whole. At the private level, Google Earth allows for informal data sharing. Information and data is provided by the public and available to the public. These systems may serve as models during the development of a CA-SDI.

State datasharing examples include the US Census Bureau 2010 Decennial Census Local Update of Census Addresses (LUCA) and UPlan, a GIS-based urban growth model that has facilitated data sharing.

From a data sharing implementation viewpoint there was a recommendation to aid in data sharing. There can frequently be changes in contacts county-by-county for framework data so develop a common email format to communicate across the state:
parcel@countyname or parcel@cityname

5.3 Technology Requirements
(Federated versus Central Data Models)

One of the most pressing questions when developing a statewide spatial data infrastructure is the format of the data model. The two options discussed during the Regional Collaborative workshops were:

- The federated data model - data sets hosted on servers at the regional level but compiled and presented as a statewide dataset through a web interface; or
- A central data model - data hosted on servers at a central statewide location.

A conceptual representation of a central vs. a federal data model is depicted in Figures 13 and 14 below:
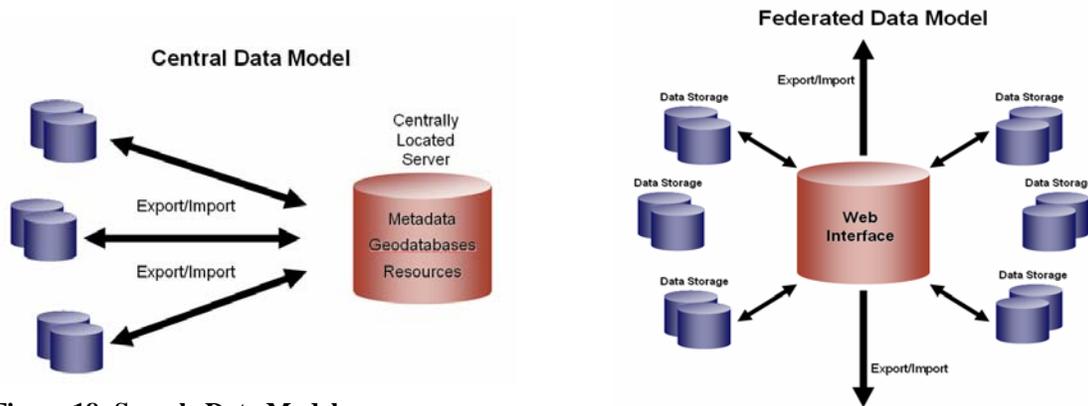
Figure 18: Sample Data Models

There are possibilities and challenges for each model. The lack of a statewide data model will have to be addressed for either model to be successful, but the implementation of those data models would likely be affected by the hosting site. Ongoing updates and maintenance would most likely fall in the hands of the entity responsible for hosting the data. A central data model would allow for consistent updates to data and metadata on a regular schedule by one entity. In this situation, quality control checks would likely be performed on the state level, which would allow for greater consistency across states.

Several Regional Collaboratives questioned the feasibility of a central data model. Many voiced the concern that consolidated data sets housed on one server would cause confusion. State representatives also expressed concern that the IT environment within the state is not appropriate to accommodate a central data model.

Regardless of the chosen data model, the data host will assume a variety of responsibilities, including updating the data and metadata as well as maintaining the server. Funding and resources for these updates must be provided. If the federated data model is implemented, these funds must be distributed in an equitable manner. While some Collaboratives have the local infrastructure in place, others do not. All Collaboratives would require additional staffing and personnel to perform the framework data hosting setup and on-going maintenance.

The Interdisciplinary Spatial Information Systems Center is a self-supporting organization at California State University, Fresno. ISIS is dedicated to providing Geographic Information Systems (GIS) training, services, infrastructure and spatial analysis to campus entities as well as the community. The ISIS Center and then universities at large were identified as potential hosts of regional data.

There was a recommendation that the state should adopt a data model and provide the leadership, guidance, and technical direction to the regional collaboratives.

5.4 Data Standards

While Regional Collaboratives expressed a willingness to share data, the real challenge comes with aggregating and storing the data. For data to be rolled together there must be consistency across datasets. Without an established standard or quality metadata, information will vary significantly. If California is to create consistent statewide datasets from individual regional contributions, it is essential that there be statewide standards for data accuracy, currency, attributes and metadata.

Regional Collaboratives expressed enthusiasm for a statewide template for standards, assuming the criteria did not affect the current datasets they have already developed. The Collaboratives' greatest concern for development of statewide standards at this point in time is the far reaching effects these changes might have on already existing technology. Many applications have already been developed that depend on existing datasets. Any changes to the format of the data would effect these applications. There would also likely be a large cost associated with transitioning from the current data format to a state standard. It was emphasized that, if standards are to be created, now is the time because many datasets are still in the developmental stage. The regions also expressed a desire for the state to provide technical tools, resources, and funding to help them adopt standards.

The benefit of statewide standards would be most significant at the state, regional and county levels. Counties and communities often require a finer level of detail and accuracy than state standards will likely provide. Regions will benefit from a state data standard because it will allow data to be interoperable both across and within regions. It is important to note that some regions have already gone to some effort to develop their own data standard and model.

The CIRGIS Regional Collaborative is well advanced in the development and adoption of data standards. The Central Coast Joint Data Committee (CCJDC) has invested significant time into data models and data standards and the ability to move data from local/regional standards to the National Map environment. For example they have mapped how to move local data into the National Map:
http://ccjdc.org/projects/NationalMap/development.html
The CIRGIS (CCJDC) site should be further researched in subsequent CA-SDI efforts:
http://ccjdc.org/projects/otherprojects_view.php?Edit=44

6. Organizational Needs

The development of a CA-SDI must work within the organizational structure of the state, regions, and counties. The five organizational areas that became apparent after the survey, workshops, and web forum, as shown in Figure 15, are explored.

Figure 19: Organizational Needs

6.1 Executive Support

Executive support within both the regions and state is essential for the development of successful and active Regional GIS Collaboratives and the creation and maintenance of a statewide SDI.

On the regional level, Collaboratives must be proactive and take initiative to move projects forward. With proper funding, CGIA can provide support to the Collaboratives and serve a similar role as NSGIC at the federal level. To do this, an organizing entity must be in place to keep projects on task, funded, and productive. Feedback across the board showed that most Collaboratives are currently operating reactively. Executive support within the regions varied widely. Responses to the pre-workshop survey showed that there is an even, three way split across Collaboratives- one third occasionally receive strong executive support, one third often do, and one third seldom do. Los Angeles County has a very successful model, with a GIO position in place. This position was established as a result of an assessment and evaluation that justified the need for the position. Ultimately, this need was determined because much of the County's GIS was not coordinated across departments. This example should serve as a model for other regions and the state.

On the state level, most Collaboratives (85%) felt the establishment of a GIO was important and believed that GIO should be placed in the new office of the State's Chief Information Officer (60%). Even in the absence of a GIO, they felt it was critical for there to be an established, higher level position to administer grants and ensure that resources are delegated to those areas that need them.

In the absence of a GIO, the Collaboratives indicated that there should be a governor authorized or legislated council that has authority in the field with state agencies. Without state level executive support, much of the responsibility falls to CGIA and the Regional Collaboratives. This is not in the best interest of the state. The Regional Collaboratives will always prioritize the interests of the region, not the state. For the state to develop and benefit from a statewide SDI, they need to provide the necessary resources and executive support from the top down. In the absence of strong executive support the system is need

driven. While this may be successful in the short term, ultimately a long term vision is necessary.

6.2 Coordination and Oversight

In advance of the on-line survey, the project team identified seven tasks that could potentially be supported by the state Geospatial Information Office, which would include a Geospatial Information Officer. These seven tasks have been ranked according to Regional Collaborative feedback. Listed in order of expressed importance:

1. Providing leadership in the development and sharing of geospatial data;
2. Coordinating and administering grants related to geospatial information and geographic information systems;
3. Promoting best practices for methods and procedures related to the use and development of geospatial data and geographic information systems;
4. Providing leadership in the development and sharing of geospatial web services and tools;
5. Provide leadership in the establishment of GIS technology and data standards;
6. Coordinating appropriate use of GIS through outreach and networking of potential and expert users;
7. Facilitating training for skills related to use and development of geospatial information and geographic information systems.
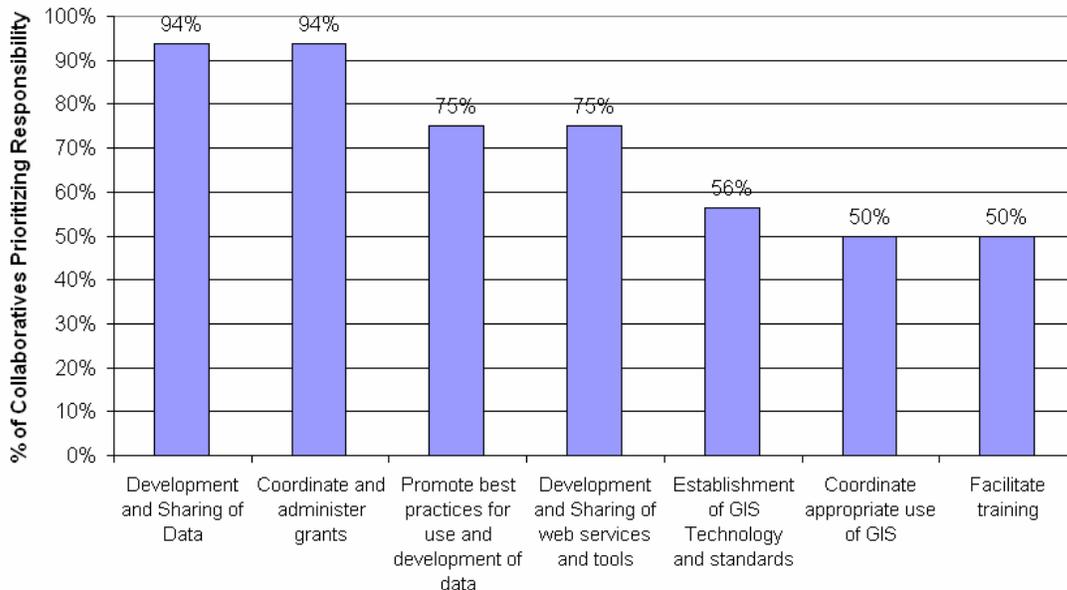

Figure 20: Prioritized GIO Responsibilities

Feedback from the seven workshops also identified several candidate GIO responsibilities:

8. Act as Chief Marketing Director and know the client business.
9. Standardize coordinate, and streamline GIS in state agencies.
10. Assimilate local data to a statewide dataset.

11. Act as the authoritative verifier of the value and quality of data and use metadata to describe source and purpose.
12. Provide a "state seal of approval." This is low cost and provides tremendous value at the local level and can encourage maintenance of good data sets.
13. Coordinate the investment of State Agency dollars.
14. Propose persuasive funding requests; stewardship/promotion of GIS.
15. Support of the California GIS Council for data development.
16. Provide architecture that allows local government to view data at a regional level.
17. Be active; do not watch from the sidelines.

Based on the original seven suggested support areas and the additional areas suggested by the Regional Collaboratives it is apparent that no one person can perform all these functions and duties.

The Regional Collaboratives also emphasized that the state must offer as much value to the regions or counties as the regions or counties offer to the state. It is important for the state to offer support through funding and resource. Otherwise any oversight or guidance could be viewed as an unfunded mandate. The counties main responsibility is ultimately to the taxpayers in their area, not regional or state initiatives, so incentive must be in place to compensate the counties for their time and effort.

The regions consistently expressed that the state must do a better job planning, coordinating and expressing their needs to the regions and counties. If the state needs regional data, then the state must develop a strategy for how the communities and counties can feed this data to them. The state must create data standards and a template for guidance and the state must communicate their needs and desires. It should also be the responsibility of the state to run quality control checks on submitted data and metadata to ensure that all of the elements are there and the data remains stable.

Ultimately, for a CA-SDI to be successful, the state must not only communicate and provide resources to the regions, but they must also demonstrate progress towards their stated goal. By facilitating collaboration and regularly moving towards the next steps, all stakeholders and involved entities will stay motivated and on track.

6.3 Staffing

Qualified staff, who can be assigned a portion of their time to data building and maintenance, are a critical element in the implementation of a CA-SDI. Regional Collaboratives expressed concern over their ability to retain qualified and skilled personnel. In the pre-workshop survey only 50% of the Regional Collaboratives said they had personnel available to support regional GIS efforts. During the regional workshops, Collaboratives and local governments also discussed the challenges of hiring and retaining the appropriate personnel. Much of the work force will be retiring over the next few years, so local governments will lose much of the long time expertise they have had. New hires often have skills in complex programming and application development, but may lack the experience in basic data development or knowledge of the political

environment. Resources must become available to hire, pay, and train staff. Ultimately, this comes back to the challenge of funding, and more specifically sustainable funding.

6.4 Budget Requirements

Throughout the outreach process, Regional Collaboratives regularly cited funding as one of their biggest constraints. In the pre-workshop survey 69% of the Collaboratives felt their funding was minimal, and half of them have no funding mechanisms in place. The biggest concerns relating to funding were availability of grants, equity of distribution, and sustainability of funds.

Educational resources that focus on data availability would prove beneficial. Many Collaboratives expressed a desire to apply for federal or state grants, however they are unaware of or lack the resources to research such grants. On the state level, it would be beneficial to have one entity apply for statewide grants and make those funds available to the regions. CAP grants are useful, but there is still a need for larger and farther reaching funds. Focusing data development in areas where money is more readily available would help ensure sustained funding. Specifically emergency preparedness and homeland security were identified as having sustained funding available. Datasets such as streets and point addresses, as opposed to parcels, tie more closely to these business needs.

Some regions expressed concern over equity and the distribution of state funds. Regions and counties that have already developed datasets are concerned that they will be compensated less than those areas that still need to develop data. Alternatively, those regions with limited resources and budgets are concerned that funding will continue to go towards the more active regions, where resources are already available. It is important that a state level entity monitor the distribution of state funds to ensure that money is distributed in an equitable manner based on clear criteria.

Finally, all Regional Collaboratives are concerned about the sustainability of funding. Most Collaboratives that do have funding are dependent on one time grants with no guaranteed future funds. Efforts within both the regions and states should focus on establishing long term, guaranteed funding mechanisms to ensure that projects are not interrupted or put on hold when grants run out.

6.5 Outreach and Community Development

Outreach and community development are critical in ensuring that the state communicates with Regional Collaboratives, local government, and policymakers. Regions regularly confirmed that the state needs to more clearly express their needs. More specifically, if the State plans to create standards for data, they must specify and publicize them and provide incentives.

In addition to community and regional GIS departments, outreach should focus on those who will benefit from statewide data. These groups were identified as:

- Small government entities that don't have funding for GIS staff.

- Entities involved in regulatory programs would benefit from improved consistency of datasets.
- Local and regional stakeholders that aren't GIS enabled or experts. They would benefit from a simple mapping tool that supports advocacy and business decisions.
- Emergency services would benefit from regional data that allowed them to see what resources are across the borders of cities, counties, and regions.
- Computed Aided Dispatch needs to understand administrative boundaries so they can get information to the right emergency response team.

Publicity and marketing are important in creating enthusiasm for a CA-SDI. Focusing communications on the practical benefits of GIS will help gain political support. If the State or CGC reached out to the development community, they could facilitate an interest in creating functional GIS data.

7. Implementation Program

The implementation of the CA-SDI based on this Phase 2 regional participation was categorized after all the regional outreach efforts into four implementation components, as shown in Figure 16:
1) Governance, 2) Data, Finance, and
4) Marketing.

Feedback collected during this portion of the strategic plan regional feedback loop provided insight into how the counties envision the CA-SDI moving forward. Each of the four components was determined critical for the development of a CA-SDI. The CGC and CGIA must prioritize each initiative as a short or long term action. A next step of the Strategic Planning process should assign action items to each element and identify resource requirements to ensure that the requirements are moving forward to meet the needs of a CA-SDI.

Figure 21: Implementation Program Categories

7.1 Governance

7.1.1. Executive Support
Given the absence of formal state-level executive support from the Governor's Office, from the chief Information Officer, and/or the Legislature California has two statewide coordinating bodies; the California GIS Council (CGC) and the California Geographic Information Association (CGIA). These two entities are working cooperatively to move California's geospatial community towards a CA-SDI.

CGC is made up of representatives from local, tribal, state and federal government agencies as well as the private sector. It was formed for the purpose of collaborating on the planning, implementation and maintenance of a California GIS infrastructure. Phase 1 of the strategic plan was the first step in this process. The Council's ongoing involvement in this process is critical to its long term success.

CGIA is a non-profit, statewide association that was formed in 1994 to facilitate coordination, collaboration, and advocacy for California's GIS community. CGIA has a Board of Directors that represent organizations from nine sectors distributed throughout the state: federal, state, regional, county, city, private, academic, non-profit, and Utility. CGIA promotes the creation and maintenance of the best practices in the governance and application of geographic information within the State of California that can become a

model for the nation. CGIA has applied for grants, received funding, and been actively involved in the development of this Phase 2 document.

In the absence of a GIO, these two organizations provide executive support to the Regional Collaboratives and counties throughout California. They must continue to work in cooperation to fulfill the roles and responsibilities outlined below to ensure that California moves in the direction of a CA-SDI.

7.1.2. Coordination and Oversight Procedures

In Section 6.2 Coordination and Oversight Procedures feedback was captured from the Regional Collaboratives. As a lead-in to the GIO discussion in the next section here are the National States Geographic Information Council (NSGIC) nine criteria that its members believe are essential for effective statewide coordination of geospatial information technologies:

1. A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans.
2. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.
3. The statewide coordination office has a formal relationship with the state's Chief Information Officer (or similar office).
4. A champion (politician or executive decision-maker) is aware and involved in the process of coordination.
5. Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse are assigned.
6. The ability exists to work and coordinate with local governments, academia, and the private sector.
7. Sustainable funding sources exist to meet projected needs.
8. Coordinators have the authority to enter into contracts and become capable of receiving and expending funds.
9. The Federal government works through the statewide coordinating authority.

7.1.3. GIO

The establishment of a state level Geospatial Information Office with a Geospatial Information Officer was supported across the regions. Many participants felt a GIO would be necessary to properly fulfill the tasks outlined above.

The concept of a state GIO is not new, and the need for a GIO has been previously documented (http://gis.ca.gov/council/docs/GIS_CPR_Report_Draft_111004_jpe.doc) and promoted. The Phase 2 Strategic Plan regional participation clearly reinforced the need for a statewide coordinating body and/or individual.

A sampling of other state level GIO activity follows for further research and consideration to meet some of the core tenants of the NSGIC statewide coordination criteria:

Arkansas: The Arkansas Geographic Information Office (AGIO) was created to educate the public and to provide information regarding land and mapping data resources to various entities throughout the state. The AGIO coordinates state and federal

geospatial data projects across Arkansas. The passage of ACT 751 of 2007 moved the AGIO under the Arkansas Department of Information Systems, which is the operational host of GeoStor, the state's geographic information systems clearinghouse. (http://www.gis.state.ar.us/AGIO_index.htm)

Idaho: Idaho's Geospatial Office's mission is to provide leadership and coordination for the creation and maintenance of statewide base geospatial data (Framework) and overall support to the GIS community. They facilitate the use, development, access, sharing, and management of geospatial data and assist with communicating the value of geospatial information to citizens and decision-makers in the state of Idaho. (http://gis.idaho.gov/)

Michigan: The Michigan Geospatial Steering Committee is composed of various leaders from the Michigan Geospatial Technology Community. The mission of the Committee is to create initiatives and follow through on the resulting projects which are designed to drive down costs, reduce redundancy and create greater efficiencies in the use of geospatial technology by the citizens of Michigan. These initiatives will be based on cooperation, communication and the sharing of knowledge and expertise. They will expand the use of GIS by creating an ease of entry for those that don't currently use GIS and creating trust among those that do. (http://www.michigan.gov/cgi)

Oregon: The Oregon Geospatial Enterprise Office (GEO) coordinates with government agencies to develop and manage geographic information. It communicates about Geographic Information Systems (GIS) issues with users and guides development of Oregon's GIS data standards. GEO is also the State's point of contact for other organizations about geographic information and GIS. GEO also hosts the Oregon Geospatial Data Clearinghouse, an electronic library of geographic information. (http://gis.oregon.gov/)

7.1.4. Governance Recommendations

Recommendations presented in the Plan are action items that both Baker and CGIA developed from Regional Collaborative input from the pre-workshop survey, the seven regional workshops, the post-workshop web forum, and the CalGIS 2008 Live Forum. The recommendations focus on the most salient Regional Collaborative input. The recommendations are not prioritized.

GR1: CGIA to collaborate with Counties who have designated Geographic Information Officers to understand how they are organized, funded, and staffed to address:
- Several counties have advanced to hire/designate GIOs which aid internal and external county coordination and awareness. (CP-S)

GR2: CGC develop Regional Collaborative Coordination Criteria as a variation on the NSGIC State Coordinator nine coordinating criteria to evaluate Regional Collaboratives. The evaluation criteria will clarify how the CGC can assist each Collaborative to address:

- No clear communication regarding what the state wants from local governments. (CP-W)
- State needs to articulate more clearly what their geospatial business objectives are and how the Regional Collaboratives data would help meet a given need. The Collaboratives could then respond and provide feedback. (CP-O)
- Beyond formation of Regional Collaboratives there has been no regional direction by the CGC; no communication on vision of success and next steps. (AE-W)
- The State needs to articulate more clearly what their geospatial business objectives are and how the Regional Collaboratives data and support would help meet a given business need. The Collaboratives could then respond and provide feedback. (RC-Discussion)

GR3: CGIA to increase advocacy role of key California needs that the CGC is unable to promote to address:
- Funding is going to require a lobbying effort at a state level. However, there's a perception that lobbying is not a good activity for government employees. (F-T)

GR4: CGC and CGIA to discuss, prioritize, and communicate the key GIO support areas that the Regional Collaboratives have requested assistance to address:
- Consistent clear state-wide GIO support. (RC-Survey & RC-Discussion)

GR5: CGC and CGIA to continue promotion of a state Geospatial Information Office with a Geospatial Information Officer to address:
- Belief that a senior GIS advocate of GIS and business solution benefits will increase funding. (F-O)
- Need for someone at the top to advocate GIS and all of its benefits. Official representative who can "walk softly and carry a big laptop" at high levels. (AE-O)
- Revenue coordination and oversight. (Plan Section 6.2)

7.2 Data

In September 2006, CGIA and Michael Baker Jr., Inc. prepared the "California Geospatial Framework Draft Data Report". This Plan, funded by an FGDC CAP grant and supplemental USGS funds, prioritized seven core and eleven supplemental framework data sets following a series of regional workshops and outreach. We refer to the prioritized framework data themes as the California Spatial Data Infrastructure (CA-SDI). With this prioritized list in place the focus of the regional participation was to obtain feedback on technology, standards, sharing, and distribution.

In California, digital imagery has become an essential tool of government at all levels for doing the people's business. According to the "Imagery Business Plan and Best Practices Report," (http://www.cgia.org/imagery-project.htm), the primary benefits of collaborative acquisition of this framework data layer are:

- Improved budget planning and support for agencies' business case for imagery acquisition

- Improved sequencing of acquisition of imagery of different resolutions to provide better coverage over time

- Lower costs through coordination and cost sharing with other acquisition programs to avoid duplication of effort within with other agencies.

The report further outlines guidance on pursuing business planning as a component of success for imagery projects; this guidance also applies in large part to other framework data layers. Finally, the report identifies best practices based on online surveys, interviews, and in-depth workshops with representatives from the same regional groups – often with different stakeholders involved. The intent of the best practices is to improve the opportunities for success in the development of the imagery framework data layer.

7.2.1. Technology

This topic was not able to be explored during Phase 2 and generally was identified as a potential Phase 3 GIS Strategic Plan task. Input from the Regionals in this phase and potentially from the state in the next phase may answer questions such as:

- Where should regional data be hosted? Possible solutions include on servers made available to the Regional Collaboratives, at universities or academic institutions, or centrally, at the state level.

- What are the technical needs for the determined setup? In order to answer this, there must first be an evaluation of the resources already available and the needs that are already being met.

- What are the ongoing needs for maintaining this set up? State input must be used to determine who will maintain data and how those resources will be funded.

7.2.2. Standards

While the regions are willing to incorporate statewide data standards, it is important that the state publicize and provide incentives for those standards. More specifically, the regions are willing to implement state standards on data that is still being developed, but transitioning previously developed data to a new format will prove challenging. For these standards to be most effective, it is critical that the state move forward and develop a standardized template while many counties are still developing data. This will maximize the benefit of these standards.

Once the standards are established, it is important that there be communication back to the regions and counties. The state must develop a smooth process that provides funding mechanisms or incentives for the regions to implement the standards. These standards must not appear as an unfunded mandate.

7.2.3. Sharing

Regional Collaboratives have asked for structured guidance from the state on the legal issues with data sharing. Many counties said that if they had a basic understanding of liability regarding data accuracy, they would be more willing to share data. Educational resources developed at the state level would provide this basic understanding.

There is a need for legislation, developed by the state, which would support the sharing of data, specifically among government agencies. There is a need for a standardized mechanism for sharing data between government entities. Currently there is inconsistency of how data is shared, whether it is free across departments and agencies, and how it is compiled.

7.2.4. Distribution

Storage and distribution of statewide data may be designed using either a federated or central data model (defined earlier). The following examples of each system may be used as a model for California's SDI.

Federated Data Model Examples

RAMONA- produced by the National States' Geographic Information Council (NSGIC) as a tool for states and their partners. Its primary purpose is to track the status of GIS in US state and local government to aid the planning and building of Spatial Data Infrastructures. Ramona is designed to work in concert with Geospatial One Stop. (http://ca.gisinventory.net/)

NC OneMap - a public service providing comprehensive discovery and access to North Carolina's geospatial data resources. It is an organized effort of numerous partners throughout North Carolina, involving local, state, and federal government agencies, the private sector and academia. It is the geospatial backbone supporting North Carolina data users. NC OneMap is the State Clearinghouse for geospatial information. (http://www.nconemap.com/)

Centralized Data Model Examples
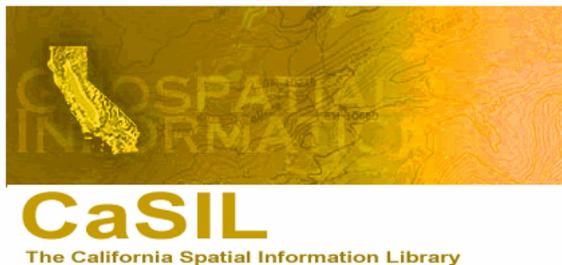
CaSIL- an active online repository of California geospatial data. CaSIL provides free access to geospatial data and metadata for the State of California, with special emphasis on natural resources. Most data in CaSIL are collected through partnerships with individual and institutional data providers.

(http://gis.ca.gov/data.epl)

Data Distribution Challenges
Independent of the distribution model best suited to California the fundamental challenges identified by the Regional Collaboratives still hold true:

- o Privacy
- o Security
- o Accuracy
- o Completeness
- o MOUs or other distribution authorization

7.2.5. Data Recommendations
Recommendations presented in the Plan are action items that both Baker and CGIA developed from Regional Collaborative input from the pre-workshop survey, the seven regional workshops, the post-workshop web forum, and the CalGIS 2008 Live Forum. The recommendations focus on the most salient Regional Collaborative input. The recommendations are not prioritized.

DR1: CGC and CGIA to collect/ review/ refine/ and distribute Data Sharing Best
Practices template to Regional Collaboratives to address:
- Desire to find or create a best practices document on data sharing agreements. This information often is lost when people leave an organization. (DS-O)
- Confusion and a lack of information regarding liability and data sharing. (DS-W)
- ❖ Note that the concurrent Imagery Business Plan and Best Practices Report initiative is a good example of applying a business planning model to selected imagery acquisition projects of regional collaboratives, and use of these case studies to develop and illustrate best practices. Though imagery focused the recommendations will likely be applicable to most framework data sets. For more information, see http://www.cgia.org/imagery-project.htm.

DR2: CGC and CGIA to re-evaluate functionality of CaSIL to load, discover, and
download framework data to address:
- CaSIL data is often old, not accurate, or not detailed enough. (DS-W)
- Develop a US Census Bureau-like interface of data lists and download capability. (DS-O)
  Develop and promote use of a Ramona-like planned data development repository (CaSIL?) to address: a number of disconnected data development initiatives. (CP-W)

DR3: CGC to evaluate, document, and promote the availability of state agency third party
data licensing agreements.
- Regional collaboratives and state agencies licensing third party data. Varying levels of restrictions on further sharing of data. (DS-T)
- Regional Collaboratives noted that State agencies will not build data, or fund building data, however they will license data. Does this support the development of a CA-SDI? (F-T)

DR4: CGC to form a Technology Work Group to investigate the most applicable
distribution model for the CA-SDI data sets to address:
- Use of regional data centers (ISIS Center) and geospatially-oriented academic institutions to host regional data. (RC-Discussion)

DR5: CGC to explore the use of GIS Centers and Academic Centers as data hosts.
- Discussion on who could host regional data sets. (Workshops)

DR6: CGC to vet the concept of libraries as historical geospatial data repositories to
enable future temporal analysis.
- Tremendous value in holding historical data for comparisons. Libraries were identified as a good historical data repository. (AE-O)

DR7: CGC to pursue implementation of CA Geospatial Framework Data Plan prioritized
data sets published in September 2006. Discussed approaches are 1) Following

funding, begin development/compilation of a data set or, 2) Without funding prototype a small geographic area with most/all prioritized data sets.

- Discussion on desire to move framework data development forward. (CalGIS Live Forum)
- Reinforce the ability of geospatial data to solve statewide policy problems. (CalGIS Live Forum)

DR8: CGC and CGIA promote educational sessions with the Regional Collaboratives and four California URISA Chapters on the Imagery Business Plan and Best Practices Report.

- Discussion on desire to move framework data development forward. (CalGIS Live Forum)

7.3 Finance

7.3.1. Funding Sustainability

Regional feedback highlighted the strong need for sustainable funding. The State should develop a funding mechanism that would ensure regular funds are available to Regional Collaboratives through an equitable process. By instilling confidence that resources will are available, tasks can move forward and build upon the work that has already been done.

7.3.2. Potential Grants

The CGIA in collaboration with the CGC must apply for a CAP grant on a yearly basis. This will ensure that work moves forward and the CA-SDI becomes a reality. It is important to have a preset schedule, with goals and objectives, for the implementation of the CA-SDI. This schedule will be developed in the third phase of the CA Strategic Plan.

7.3.3. Budget Plan

The budget plan will be a focus of the third phase of the CA Strategic Plan. At this time Regional Collaboratives are not in a position to provide feedback on a state budget for the implementation of the CA-SDI.

7.3.4. Finance Recommendations:

Recommendations presented in the Plan are action items that both Baker and CGIA developed from Regional Collaborative input from the pre-workshop survey, the seven regional workshops, the post-workshop web forum, and the CalGIS 2008 Live Forum. The recommendations focus on the most salient Regional Collaborative input. The recommendations are not prioritized.

FR1: CGIA to deliver additional Financial Sustainability education sessions, in collaboration with URISA chapters, throughout California to address:

- One Regional Collaborative is able to obtain and distribute funds as a 501(c)(4). (F-S)
- The BAR-GC has aligned itself with ABAG and as such can receive and administered funds for the collaborative. (F-S)

- Funding is not sustainable. Consistent lack of recurring funding year-to-year. (F-T)
- Funding and resource impact are an issue in every region. (F-W)
- At least one county's goal is to be financially self sufficient. Ventura hopes to act and operate like a business, and look for opportunities for revenue generation and sharing of costs. (F-O)

FR2: CGIA, collaborating with the CGC, to apply for multiple 2009 FGDC CAP Grants and other funding sources to address initiatives as discussed in the April 2008 CA GIS Council meeting and captured in this Plan in Section 7.5 CalGIS 2008 Live Feedback Forum to address:
- Move forward and create an information management system. Organizations must worry less about accuracy and, by accepting a more fluid base data model, efforts can move forward. (DS-O)
- The National Map and a CA-SDI should be targets for data sharing. County/regional framework data should be built to be shared. (DS-O)
- Regional data sharing collaboration is difficult because the data attributes are not standardized and the fields don't match. It is hard to integrate the data. (DS-W)
- Many critical datasets are created at the local level. Filtering them up to the state could/will be a challenge due to inconsistencies. (DS-T)
- There is no state data model to build upon. (DS-T)

FR3: CGC to form an Infrastructure Work Group to develop concept of the CA-SDI framework data sets as a critical infrastructure necessary to meet numerous policy and business needs across California to address:
- Promote GIS awareness among funders. Currently, funders see this technology as something extra and not a critical element to the advancement of each department. (AE-O)
- Perception that GIS is expensive. Position as only one-tenth of any improvement project. (F-W)
- Capital bond funds have been obtained to build state infrastructure. Building framework data sets as a critical infrastructure should be funded in a similar fashion. (F-O)

FR4: CGC and CGIA to form a Grant Work Group focused on identifying and applying for regional and state funding to address:
- Difficult to get grants for regional data development because of the boundaries. There is no grant entity, so they can't receive and administer grants. (F-W)
  Financial resources and grants are available if a mechanism to administer funds can be determined. (F-O)
- Hire a grant writer to gain funding for framework data initiatives. (F-O)
  Utilizing one-off grants for initial builds increases risk of funds for future technology enhancements and data refreshes. (F-T)

- Several Collaboratives have established funding mechanisms or developed themselves as a 501(c)(4). (F-S)

FR5: CGC and CGIA to evaluate how to obtain larger sustainable funding for the development/compilation of the CA-SDI.

- Funding and resource impact are an issue in every region. (F-W)

- Ability to leverage federal funding needs to be greatly improved. (F-W)

- No funds for regional data creation. Counties need only surrounding counties buffer extent not entire county. (F-W)

- State funding [Caltrans cited] goes to COGs and not those who build and sustain data. (F-W)

- Funding is not sustainable. Consistent lack of recurring funding year-to-year. (F-T)

- Money is the best incentive however there is the question of where the money will come from and where it will go. (F-T)

- There is very limited funding for regional efforts. Responsibility typically falls on the local governments. Everybody needs the data but nobody can pay. (F-T)

- Funding is going to require a lobbying effort at a state level. However, there's a perception that lobbying is not a good activity for government employees. (F-T)

7.4 Marketing / Awareness / Promotion

Previous work, ongoing efforts, and the need for a Statewide Data Infrastructure should be the focus of future marketing efforts. The GIS community must take advantage of events like "GIS Day" to publicize these needs to legislators.

The State of California has produced several reports relating to a CA-SDI. Future efforts should build upon work that has already been accomplished. It is important that these publications remain in the public's view. Outreach and marketing efforts should highlight previous works to ensure that the public is aware and sees the benefits of these efforts.

In September 2006, CGIA and Michael Baker Jr., Inc. prepared the "California Geospatial Framework Draft Data Report". This Plan, funded by a CAP grant and USGS funds, prioritized seven core and eleven supplemental framework data sets following a series of regional workshops and outreach. The results of the report are very telling, and should continue to be referenced throughout the development of a statewide strategic plan.

California Geospatial Framework Draft Data Plan

Summary Presentation
CalGIS 2007

George White : CGIA Chair
Malcolm Adkins : Michael Baker Jr., Inc
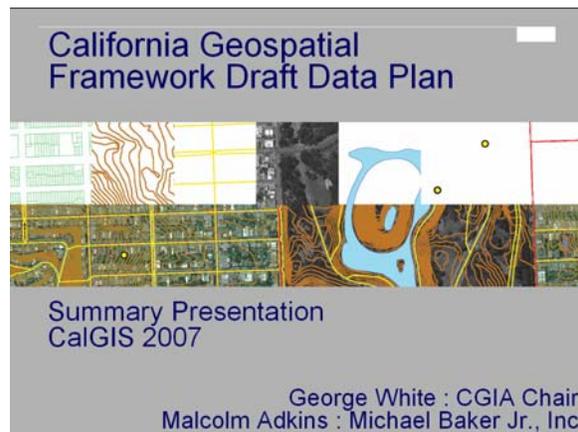
In addition to publicizing GIS and its capabilities, the CGC and CGIA should promote awareness of their goals, functions, and services. Outreach through resources such as the websites and newsletters will improve communication statewide. CGIA regularly emails news flashes that should also serve as a marketing mechanism. These entities should

focus their efforts and future tasks should be prioritized to ensure that the CA-SDI remain the focus of ongoing activities. Recently a marketing piece was developed for CGIA as shown below.

At the NSGIC mid-year and annual conferences states are given two minutes to present on geospatial activity within there states. For the NSGIC annual conference in 2007 a trifold was developed to keep within the two-minute time limit and yet communicate on the many geospatial activities within California.

7.4.1. Marketing / Awareness / Promotion Recommendations:

Recommendations presented in the Plan are action items that both Baker and CGIA developed from Regional Collaborative input from the pre-workshop survey, the seven regional workshops, the post-workshop web forum, and the CalGIS 2008 Live Forum. The recommendations focus on the most salient Regional Collaborative input. The recommendations are not prioritized.

MR1: CGC and CGIA work in cooperation to take the June 2008 Executive GIS Event to the Regional Collaboratives. The event is focused on the business value of GIS as opposed its value as a technology:

MORE THAN A MAP: HOW GOVERNMENT AGENCIES ARE COLLABORATING ON GEOGRAPHIC INFORMATION FOR BETTER PUBLIC SERVICES

A Safer California	A Growing California
A Healthy California	A Well Mobilized California
An Open California	A Greener California

- People talking about GIS as a business solution and not as a technology. (CP-S)
- Educate elected officials and management on GIS, how GIS is used, and the business value. (AE-O)
- CGC should be more visible. "If you don't see them, you don't know them, so you don't care about them". (AE-O)
- There exists an "organizational or public ignorance" of the capabilities of GIS. (AE-T)
- Not enough communication between the producers of geospatial solutions and legislators at the city, county, regional, and state levels. (AE-W)
- Regional Collaboratives conduct goal-oriented meetings with the state government that would advance both interests. This is best pursued by CA GIS Council and CGIA. (CP-O)
- Funding is critical and GIS is not just fly-thru's and map creation. (F-O)
- Discussion on need to re-energize the Regional Collaboratives and interact with them on a regular basis. (CalGIS Live Forum)

MR2: CGC and CGIA interact with the four California URISA Chapters to increase awareness of the prioritized CA-SDI as published in the CA Geospatial Framework Draft Data Plan in September 2006, and promote the recommendations in this GIS Strategic Plan Phase 2: Regional Participation.

- Discussion around the promotion of the FGDC Fifty-state CAP Grant initiatives and their outcomes with a wide audience of California geospatially-oriented organizations. (CalGIS Live Forum)

MR3: CGC and CGIA to assess the value and ability of representatives to outreach to other relevant organizations to promote adoption of CA-SDI.

- Discussion around the promotion of the FGDC Fifty-state CAP Grant initiatives and their outcomes with a wide audience of California geospatially-oriented organizations. (CalGIS Live Forum)
- Candidate outreach organizations initially identified include NASCIO, NACO, and NSGIC. (CalGIS Live Forum)
- Candidate outreach public safety organizations include Police, Fire, and Sheriff. (CalGIS Live Forum)

MR4: CGC and CGIA to re-assess, re-define, and re-promote CaSIL as the central repository to post, discover, and download CA-SDI data to address:

- Need for a website to publicize geospatial information related to both CA and the regions. (AE-O)
- Belief that vast amounts of framework data sets exist and are not known. Populate and promote authorative central repository. (AE-O)
- There is a central repository, CaSIL, that makes data accessible. (DS-S)
- Promote CaSIL to meet need for a central library of available framework datasets. (DS-O)
- Hard to find public domain framework data. (DS-W)
- Duplication of building framework data. (F-T)
- CGC to address within the existing CaSIL framework the availability and promote the use of this central repository for geospatial framework data discovery and download.

MR5: CGC and CGIA should update "The state of GIS in California" tri-fold annually in advance of the NSGIC annual conference and both email push and post to their respective web sites to increase the awareness of geospatial activity in California to address:

- Published tri-fold on "The state of GIS in California" for NSGIC 2007 Conference. (CP-S)

MR6: Develop and post on CGC and CGIA web sites geospatial contact directories:
1) Variation on the CGC Members list to show key GIS contact information per represented agency or entity.
2) Regional Collaborative contact list.

3) Evaluate re-instating an updated California-wide Geospatial Yellow Pages for all GIS practitioners

- Hard to determine the GIS representative for an area, and there is not always a representative or direct contact with the State. (CP-W)
- Create (resurrect) the concept of a GIS Yellow Pages resources. (CP-O)

MR7: Create and maintain directory of geospatial-oriented academic programs on CGC and CGIA web sites to address:

- Many local colleges have good GIS educational programs. (AE-S)

7.5 CalGIS 2008 Live Feedback Forum

At the 2008 CalGIS Conference in Modesto the pre-final Plan project approach and recommendations were presented to serve as the final Regional Participation feedback opportunity.

Feedback from the three conference session have 1) been integrated as a new recommendation, 2) integrated as supporting feedback to an existing recommendation, or 3) captured below for future consideration.

For consideration as a future initiative:

- Strategic Plan Phase 2 recommendations should be prioritized by the CGC with the understanding that the Strategic Plan and the recommendations are understood to be a multi-year rollout.

- Apply performance metrics to all recommendations [moving forward]
    Performance Metrics – A set of standard measures used to identify and evaluate how well specified characteristics or properties of resources, processes, customers, or desired results change over time when compared against a baseline value.

- Identify the State Agency that will become the steward of the individual CA-SDI framework data sets.

- A subsequent phase of the strategic planning process should follow the adopted NSGIC strategic planning process and target State Agency needs to complement the prior phase 1 and phase 2 findings and recommendations.

- Consumer GPS and web-based mapping and virtual globes are having significant regional impact. The positive impact is a heightened awareness of mapping by management and local and regional users. The negative regional impact is heightened management and users expectations that data is already created, can readily be found on the web, or be quickly and inexpensively created.

Appendices

Appendix A: Pre-Workshop Survey Overview

Results of the pre-Workshop survey take three forms:
1. Sixteen individual Regional Collaborative survey response
2. Compiled survey results
3. Survey results analysis

For the purposes of this Plan the Survey Results Analysis are provided. All other detailed
Survey results are available on the CGIA web at:
http://www.cgia.org/strategic-gisplanning.htm

Appendix B: Workshop Reports

All seven Workshop Reports are provided for convenience.

Appendix C: Post-Workshop Web Forum

Feedback from the Web Forum are provided here for your convenience.

CALIFORNIA GIS STRATEGIC PLAN PHASE 2:

REGIONAL PARTICIPATION

APPENDIX A:
Pre-Workshop Survey

CREATING A CALIFORNIA
SPATIAL DATA INFRASTRUCTURE

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CALIFORNIA PHASE 2 STRATEGIC PLAN
PREWORKSHOP SURVEY ANALYSIS

I. Overview

In order to maximize the value of the scheduled regional workshops, an online pre-workshop survey was sent to representatives from sixteen regional collaboratives. The results of this survey were used as background for discussions during the seven workshops.

The survey was designed using the NSGIC Strategic Plan template as a guide, with particular focus on the Current Situation, Requirements, and Implementation sections. The survey was divided into three primary areas, including:

1. Regional Organizational Capacity
2. Spatial Data Infrastructure (SDI)
3. SDI Implementation

All sixteen collaboratives responded to the survey. An analysis of the results follows. An overview of survey responses and the individual regional collaborative results are attached.

II. Regional Organizational Capacity

The first section of the survey asked questions regarding the organizational capacity of each regional collaborative. Questions focused on technology, funding, staffing, and policies.

Graph 1 indicates the percentage of collaboratives whose technology is considered suitable in the areas of networking, data storage, data exchange, hardware, and software. According to respondents, technology is the most limited in the areas of networking and data exchange (44% of collaboratives considered technology suitable). Hardware and software was considered the most suitable with 63% of collaboratives answering positively.
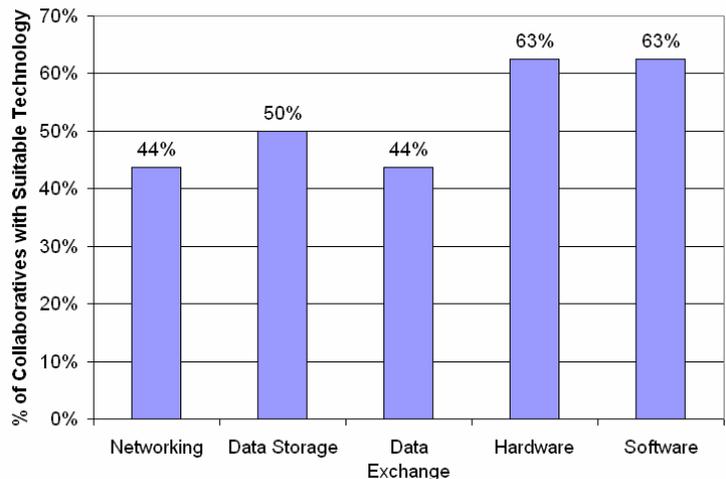
Graph 1: Technology Suitability

Michael Baker Jr., Inc

Baker

CALIFORNIA PHASE 2 STRATEGIC PLAN PREWORKSHOP SURVEY ANALYSIS

Funding limitations were of great concern. 69% of regional collaboratives (11 of 16) felt there funding was minimal (see Graph 2). No respondents listed their funding as optimal. 50% of respondents (8 of 16) stated that they have no funding mechanisms in place. The remaining respondents were funded primarily by cost sharing agreements (25% or 4 respondents), ABAG, AMBAG, or SaCOG (12% or 2 respondents), IRS 501c4 (6% or 1 respondent), and other grants (38% or 6 respondents). See Graph 3.

Funding Adequacy
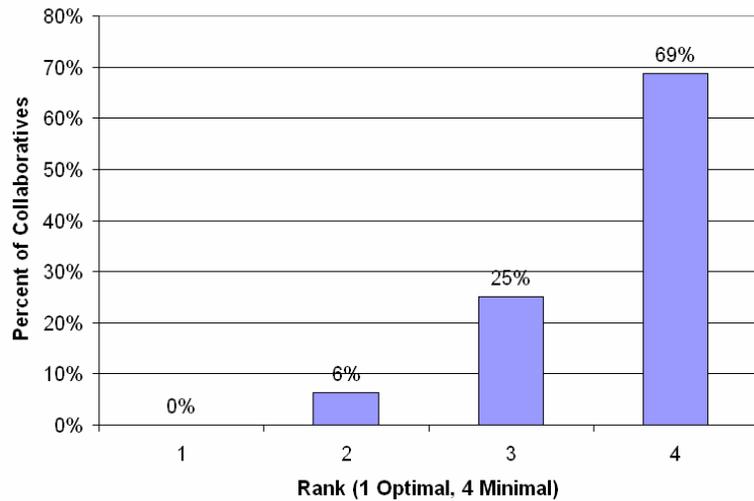
Graph 2: Funding Adequacy

Funding Mechanisms
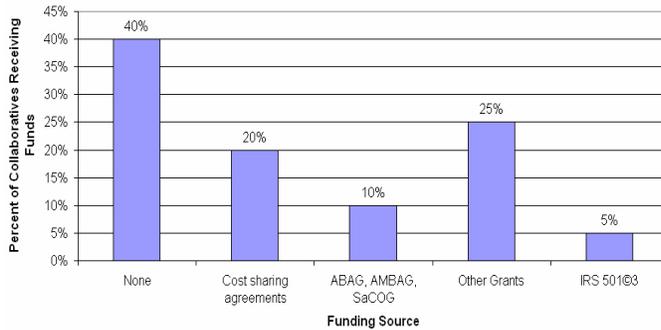
Graph 3: Funding Mechanisms

Only 50% of the regional collaboratives (8 respondents) have personnel available to support regional GIS efforts, and those that do have employees, have less than 5.

On-site paid employees were the most common type of personnel (69% or 9 respondents) and retained consultants were the least common (36% or 5 respondents).

See Graph 4.

Availability of Personnel
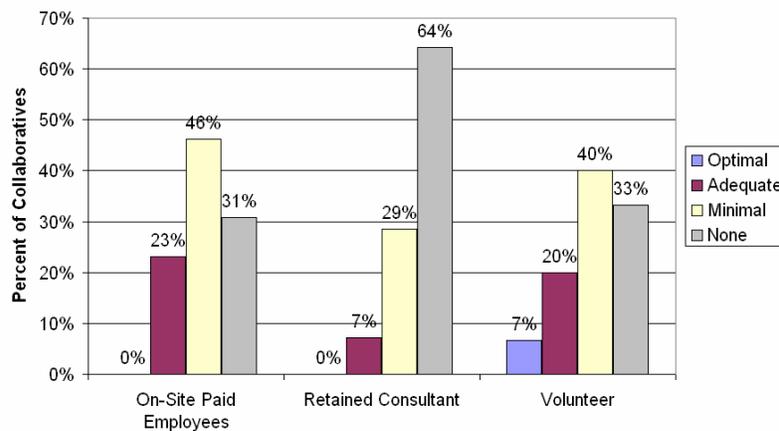
Graph 4: Availability of Personnel

Michael Baker Jr., Inc

Baker

CALIFORNIA PHASE 2 STRATEGIC PLAN PREWORKSHOP SURVEY ANALYSIS

38% (6 respondents) said they "occasionally" enjoyed strong executive support. 31% (5 respondents) each said it was either "seldom" or "often" that they received strong executive support (see Graph 5). 75% (12 respondents) said they have a project oversight process in place but 75% also responded that there were policies that needed to be put in place or updated to better facilitate both work and the sharing of data.
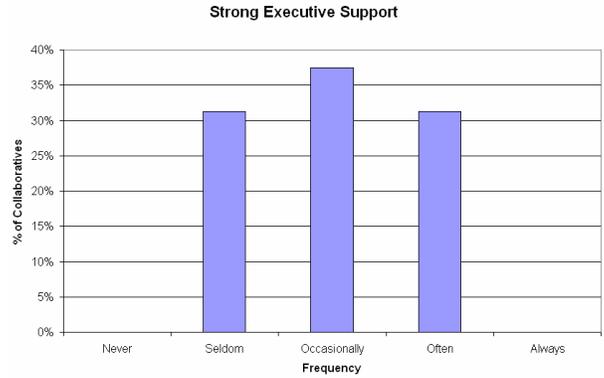
Graph 5: Executive Support

III. Spatial Data Infrastructure (SDI)

All sixteen collaboratives were asked to identify the core seven and California-centric eleven data themes that they have available. These results are best summarized in a table (see Table 1). San Diego Regional Collaborative had the most datasets available (all 7 core, and 7 of the 11 California-centric). Ortho Imagery was the most widely available data with 7 of the collaboratives identifying this dataset.

Table 1: Dataset Availability

	Bay Area Regional	Central Coast	Channel Islands	Eastern Sierra	Far North Regional	Gold Country Regional	Humboldt Area	Mendocino-Lake Regional	North Valley Regional	Sacramento Regional	San Diego Regional	San Joaquin Valley Regional	San Luis Obispo Regional	Sierra Nevada Regional	SoCalGIS	SE California
Cadastral			X				X			X	X					
Ortho Imagery		X	X							X	X		X	X		X
Transportation							X				X					
Elevation									X		X	X	X	X		
Hydrography											X					
Geodetic Control											X					
Governmental Units			X			X	X			X	X			X		
Street Addressing			X				X				X					
Utilities																
Public Land Conveyance Records																
Buildings and Facilities			X													
Flood Hazards							X				X			X		
Vegetation											X					
Biological Resources											X			X		
Cultural and Demographic Statistics											X			X		
Soils											X					
Wetlands											X					
Earth Cover											X					

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CALIFORNIA PHASE 2 STRATEGIC PLAN PREWORKSHOP SURVEY ANALYSIS

Each collaborative was then asked if any of the available datasets met standards (see Table 2). Only Sacramento and San Diego Regional Collaboratives had datasets that met standards. Additional questions were asked regarding accuracy, currency, and source for the data. Please refer to the attached summaries for these results.

Table 2: Dataset Standards

Legend: **Adopted Standards** (blue), **No Adopted Standards** (gray)

	Bay Area Regional	Central Coast	Channel Islands	Eastern Sierra	Far North Regional	Gold Country Regional	Humboldt Area	Mendocino-Lake Regional	North Valley Regional	Sacramento Regional	San Diego Regional	San Joaquin Valley Regional	San Luis Obispo Regional	Sierra Nevada Regional	SoCalGIS	SE California
Cadastral			gray				gray									
Ortho Imagery		gray	gray							**blue**	gray		gray	gray		gray
Transportation			gray				gray			**blue**	gray					
Elevation									gray		gray	gray	gray			
Hydrography										**blue**	**blue**					
Geodetic Control																
Governmental Units			gray			gray	gray			gray	gray			gray		
Street Addressing			gray							**blue**						
Utilities																
Public Land Conveyance Records																
Buildings and Facilities			gray													
Flood Hazards							gray				**blue**			gray		
Vegetation											gray					
Biological Resources																
Cultural and Demographic Statistics											gray			gray		
Soils											**blue**					
Wetlands											**blue**					
Earth Cover											gray					

Each collaborative was asked which five datasets they would develop next (or improve upon). For the core seven data themes, transportation was the most common with 69% of respondents listing this category (see Graph 6).
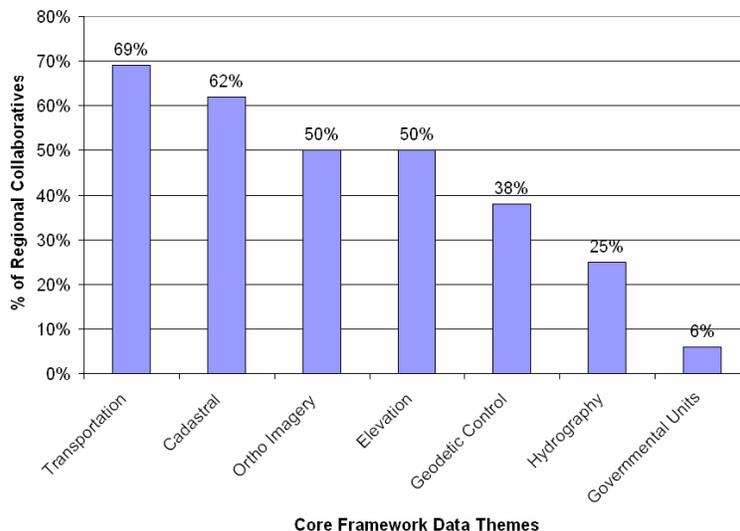
Graph 6: Core Framework Dataset to Develop Next

Values shown: Transportation 69%, Cadastral 62%, Ortho Imagery 50%, Elevation 50%, Geodetic Control 38%, Hydrography 25%, Governmental Units 6%

Y-axis: % of Regional Collaboratives
X-axis: Core Framework Data Themes

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Street Addressing was the most common of the 11 California-centric, with 56% of respondents listing this category (see Graph 7).
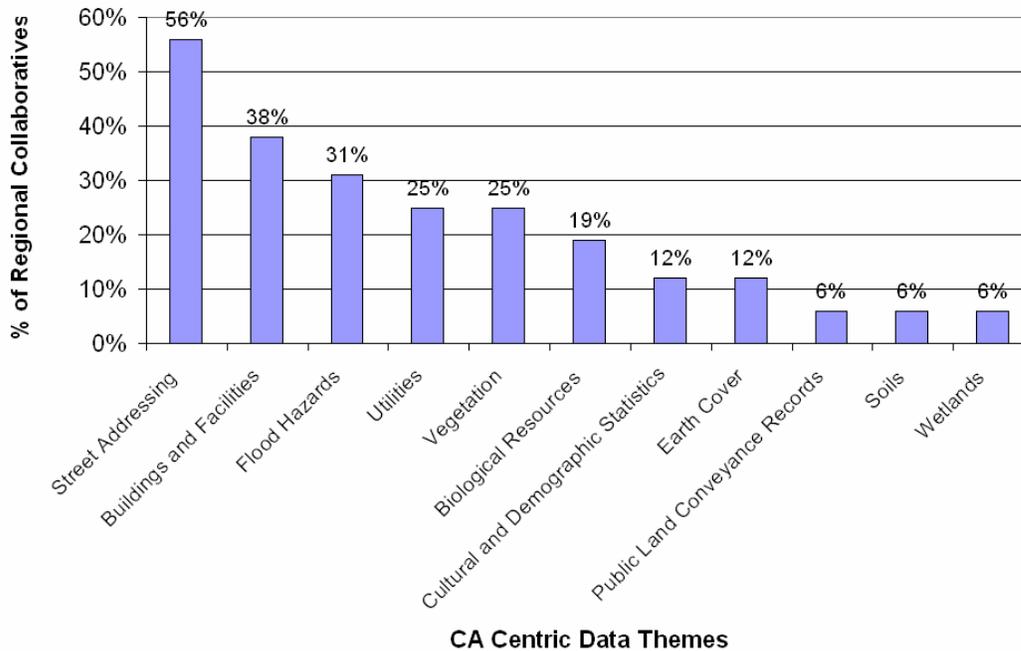
Graph 7: CA Centric Data Themes to Develop Next

IV. SDI Implementation

In the first 4 questions of this section, the regional collaboratives were asked which available resources they have used or are using (see Graph 8). The most commonly used resource is the California Spatial Information Library with 75% respondents saying they have used this resource. Alternatively, no regional collaborative has used the 50 States Initiative.

Graph 8: Utilization of Available Resources

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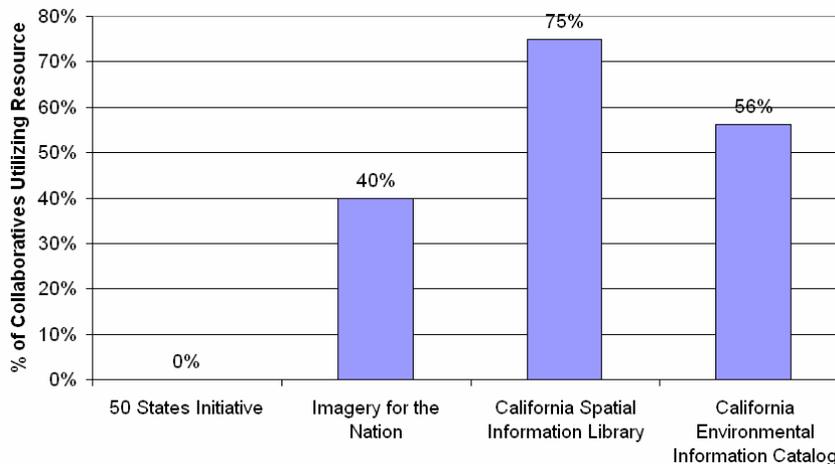
**CALIFORNIA PHASE 2 STRATEGIC PLAN
PREWORKSHOP SURVEY ANALYSIS**

The final survey questions focused on governance and the establishment of a GIO. 85% of respondents viewed the establishment of a state government GIO as important. The most commonly identified roles and responsibilities for the GIO are identified in Graph 9. Additionally, 60% of respondents (9 collaboratives), felt the GIO should be placed in the new office of the State's Chief Information Officer.
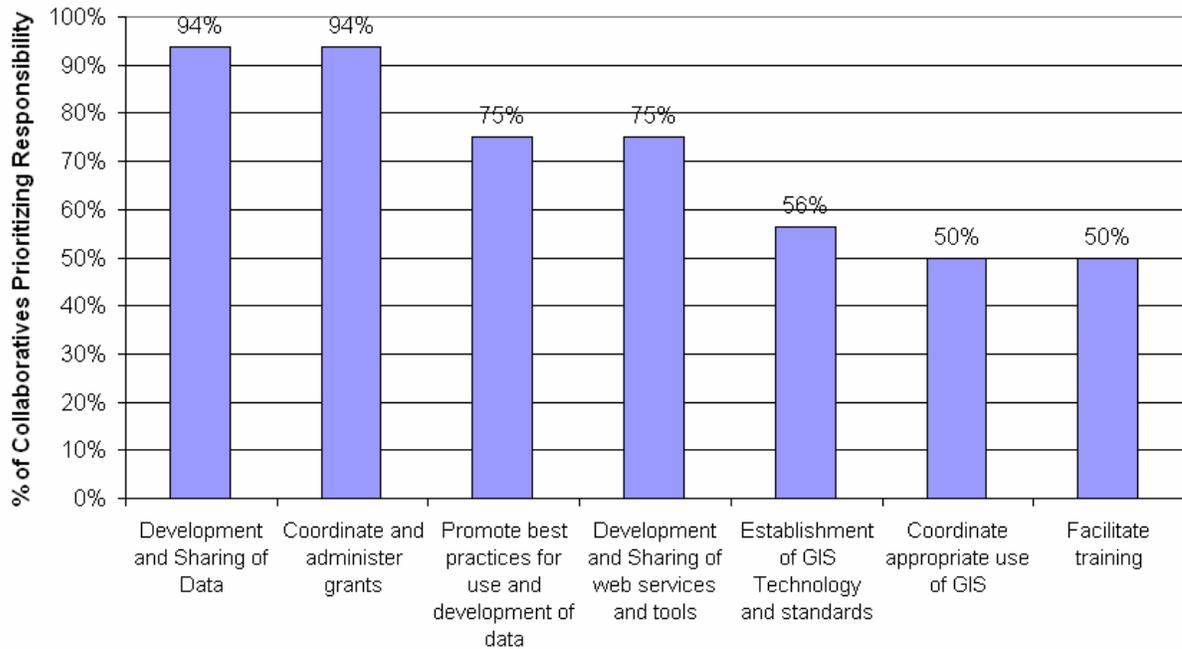
Graph 9: GIS Roles and Responsibilities

CALIFORNIA GIS STRATEGIC PLAN PHASE 2:

REGIONAL PARTICIPATION

APPENDIX B:
Workshop Reports

CREATING A CALIFORNIA SPATIAL DATA INFRASTRUCTURE

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CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #1:
Redding, CA
October 10, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Baker

Prepared on: **October 12, 2007**

CALIFORNIA PHASE II STRATEGIC PLAN- REGIONAL WORKSHOP 1
Redding, CA   10/10/07

I. PREWORKSHOP SURVEY RESULTS

A. Far North Regional GIS Council

1) Regional Organizational Capacity
- Technology is not meeting business needs in networking, data storage, data exchange, hardware, or software capabilities.
- Funding is considered minimal and there are currently no funding mechanisms in place.
- There is no staff available to support GIS efforts. There are minimal volunteers.
- Strong executive support is seldom available.
- There is no formal process for project oversight, but one is in the works.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- This region has none of the seven core framework and eleven California-centric data theme datasets available.
- The top 5 regional datasets this region would like to develop next are:
    - Cadastral
    - Transportation
    - Elevation
    - Street Addressing
    - Earth Cover

3) Regional Implementation
- This region has used the Imagery for the Nation, the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Provide leadership in the establishment of GIS technology and data standards
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate appropriate use of GIS through outreach and networking of potential and expert users
    - Coordinate and administer grants related to geospatial information and geographic information systems
    - Assimilate local data to a statewide dataset, but

- This region believes the GIO should be placed in a state agency that is programmatically neutral with broad, enterprise wide responsibilities --e.g., the State Library, the Governors' Office of Planning and Research (OPR) or the Department of Technology Services (DTS)

B. North Valley Regional GIS Council

1) Regional Organizational Capacity

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- Technology is not meeting business needs in networking, or data exchange capabilities, but is suitable for data storage, hardware, and software capabilities.
- Funding is considered minimal and there are currently no funding mechanisms in place.
- There are less than five staff available to support GIS efforts. There are minimal on-site paid employees, and adequate retained consultants.
- Strong executive support is often available.
- There is no formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
    - Elevation (no standards, >1 m horizontal accuracy, >1 year old, from USGS 30 meter DEM)

- The top 5 regional datasets this region would like to develop next are:
    - Cadastral
    - Transportation
    - Hydrography
    - Street Addressing
    - Flood Hazards

3) Regional Implementation
- This region has used the California Spatial Library and the California Environmental Information Catalog.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Facilitate training for skills related to use and development of geospatial information and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems
- This region believes the GIO should be placed in a state agency that is programmatically neutral with broad, enterprise wide responsibilities --e.g., the State Library, the Governors' Office of Planning and Research (OPR) or the Department of Technology Services (DTS)

II.REGIONAL WORKSHOP 1 SUMMARY

ATTENDENCE

Workshop 1 had a strong representation from the Far North Regional Collaborative. Additional representation included one individual from the North Valley. In all, 22 individuals and two Collaboratives were present for the discussion. 13 individuals were from local government, 3 from state government, and 6 from private entities.

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CALIFORNIA PHASE II STRATEGIC PLAN- REGIONAL WORKSHOP 1
Redding, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Participation • Strength in numbers • Broad regional representation including county, city, state and federal	• North Valley has not communicated in a year. • There are three counties, and therefore three "pots of money."		
Education • Communication through regional website; https://r1.dfg.ca.gov/Portal/Default.aspx?alias=r1.dfg.ca.gov/portal/fnrgc • Minutes of the meetings are posted on the website	• There is a need to do a better job of outreach beyond core geospatial resources into increase awareness and values of GIS.	• The opportunity exists to educate elected officials and Management on GIS, how GIS is used, and the business value (Shasta County is focusing on this)	• "Organizational or public ignorance" of the capabilities of GIS.
Data Sharing • There are "data sharing arrangements" in place and procedures for updating data.	• There is doubt that these data and procedures are being used. • There are concerns about data quality. • There is a lack of education regarding liability and inaccuracy of the datasets.	• The top priority datasets are transportation and cadastral. They are pursuing transportation and have collected road layers from most agencies. • Strong regional desire to find or create a best practices document on data sharing agreements. Often times, this information is lost when people leave an organization. How to maintain, operate, and disseminate data. • Develop a standard disclaimer for liability.	• There has been no discussion of who would host the data. • There is often an unwillingness or inability to share information. This unwillingness is centered around a lack of comfort with the currency and accuracy of data. There is a perceived liability. • There is a need for internal policies for sharing datasets.
Funding • There has been ongoing discussion	• There is currently no direct funding,	• There are financial resources and	• There is a question of who

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
regarding funding opportunities.	and no jurisdiction has identified money to go towards data development.	grants available if a mechanism can be determined. • There has been discussion of grant opportunities and becoming a 501c3.	would manage any grants. Two possibilities mentioned were the Western Shasta Regional Conservation District or the Regional Transportation Authority.
Data Development	• There is no true regional data. • Funding and resources is an issue. • Difficulty finding staff with the right skills.	• There is a need to move forward and create an information management system and worry less about accuracy. By accepting a more fluid base standard, the first step of creation will be accomplished. • Create a "One Stop Shop" for regional GIS data. This would alleviate the leg work that is required for acquiring data. • Create a formalized distribution plan and schedule.	• Perceived liability due to accuracy of the data.

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

The challenge of who will create the regional or statewide datasets has not yet been answered. Ultimately, the GIS staff may not make this decision, because this must be answered at a higher level. Although the GIS staff is supportive of these efforts, it is not always a priority to the decision makers. Often times, support is given, but no actual funds.

There is a concern that the implementation of standards or other fundamental changes in data at this time would have far reaching effects. Because certain datasets have formed the basis for other systems (e.g. transportation), establishing standard would require the modification of all impacted systems. This challenge could limit the changes people are 0+willing to make.

It is necessary to determine the core attributes at the region and the state and then ensure it is extendable to more detailed attributes at the regional and local level. The state must make it easy to comply with the standards or it will likely not happen without dedicated funding. There is concern on the cost to add additional attributes to get to a common standard.

While people are willing to share data, the real challenge comes with aggregating and storing data. There must be a commonality in order to role data up together. Without quality metadata or an established standard, information will vary significantly. Specific questions must be answered first (e.g. Do you include forest service roads, mobile home parks, etc?). These questions must be answered based on who the intended audience is. CGIA is focused on making data available for state, regional, or local audiences. Does this audience include the private sector, etc?

It was suggested that the Open Street Map Initiative be used as a model. Google Earth allows for informal data sharing. Information and data is provided by the public and is available to the public. The concern with this format is liability. These concerns must be addressed at the state level.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

Funding! Funding is the best incentive to encourage involvement. Funding would buy equipment, staff, or services for those who don't have internal resources. Currently, creating standards may not be a priority for an organization, so any funding that is available may not be directed toward this effort.

While locally there is less concern for statewide datasets, regionally, people do care about the state. People are willing to share the data, if the state is willing to aggregate the data. There is doubt that the state is willing to take this step, and if it becomes the regions responsibility, it likely won't happen.

In the region the question is asked, what is the regional value to move data for a statewide coverage and what are the associated costs. Are there state agencies who have funds to aggregate data, move the data into a common data model, and is agency funding available?

There is a need at the state level for this data. While money is being spent on these efforts, much of the progress is disparate. Caltrans has aggregated data, but has not maintained it. Some state

agencies have agreements with local agencies for data sharing, but these have been made in separate pieces.

The Bay Area has MOUs to share data and have purchased four servers which host this data. This data is a one time delivery and does not have a continual update cycle. There is also no ongoing sustained funding.
For a less resource rich collaborative, how do they accomplish this? And then what is done with the data? These are questions that must be answered.

The City of Redding has many of their city layers available on their website. In a staged process, this could be done with other communities. By making standards very easy to comply with, the process will be initiated faster.

IMPLEMENTATION

1) State Support

The state must offer as much value to the region/locality as the region/locality offers to the state. Make it as easy for the region as they make it for the state.

Caltrans process for hiring GIS staff is slow. They do not have the resources to create data, and are challenged even with sharing the data within departments. There is a lack of awareness that other departments can benefit from the data.

The state could offer more geospatial classification exams to build a talent pool.

While Regions have developed personal relationships amongst themselves, those relationships can only go so far. In order to roll data up to the state level, there has to be more than an informal relationship.

2) Governance

The GIO and support staff will likely be between three and seven people. [Adkins]
This Region strongly believes the GIO should be involved in coordinating grants. There must be an established, higher level position, to administer grants and ensure that resources are delegated to those areas that need them. There is a need for a position whose purpose is to ensure that funds are used in a way that supports the overall infrastructure of the state. As the situation stands now, those areas that already have resources are the areas that continue to receive grants. There is doubt that we can be successful without a GIO. You need authority at that level to accomplish the necessary tasks. This authority would create much more consolidated coordination.

The question was posed: Given that there isn't a GIO, what can the CA GIS Council do for you? Answers included:

It would be beneficial to have someone, such as a GIO, with authority. They could move quicker on initiatives, consolidate coordination. In the meantime, CA GIS Council can:

- Acquire, educate and serve as a conduit for best practices, to avoid reinventing the wheel.
- There needs to be more of a focus on marketing both GIS and the CGIS Council beyond just GIS professionals, but also to the decision makers, who aren't aware of the benefits.

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- Define the responsibilities of the GIO. The GIO needs to make recommendations to legislature.
- They can develop, build, and create standards, and complete the Strategic Plan.

While it would be beneficial to have someone with authority, a GIO cannot simply ask for funds. These funds come out of a budget, so the GIO would have to have a direct connection to receive funds from the legislature. Because there is a finite amount to the budget, the GIO is competing against other factors. Often GIS is integral to those other elements.

The presence of a GIO would help create awareness of the need for GIS and a connection to legislature. While there is currently not a GIO, it is important to take advantage of events like "GIS Day." Through a "GIS Day", legislators can become more aware of the need to fund GIS. Ideas included:

- "A day in the life of government without GIS"- show what a day in the life of government would be like without GIS.
- Show how GIS connects to a policy or problem, not that it is GIS for the sake of GIS.

CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #2:
Sacramento, CA
October 17, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Baker

Prepared on: **October 19, 2007**

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 2
Sacramento, CA

I. PREWORKSHOP SURVEY RESULTS

A. Sacramento Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity
- Technology is not meeting business needs in networking, data exchange, data storage, or hardware capabilities, but is suitable for software capabilities.
- Funding is considered minimal. Cost sharing agreements are the only listed funding mechanism.
- There are less than 5 staff available to support GIS efforts. There are minimal onsite paid employees and retained consultants.
- Strong executive support is occasionally available.
- There is a formal process for project oversight. Cost shared projects run though the Sacramento Regional GIS Committee and are managed by SACOG. Other informal data creation projects are managed at the county level. There is usually no firm schedule due to funding constraints.
- There is not a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
    - Cadastral (no standards, >1 m horizontal accuracy, 4-12 mths old, from County Governments)
    - Ortho Imagery (meets USGS standards, 0.5-1.0m horizontal accuracy, >1 year old, from NAIP and 1,100 square miles of Merrick six inch.)
    - Transportation (meets standards for a Data model developed off of UNETRANS project, 0.5-1.0m horizontal accuracy, 4-12mths old, from County level coordination groups)
    - Hydrography (meets National High Resolution Hydrography Dataset standards, >1m horizontal accuracy, >1 year old, from USGS)
    - Governmental Units (no standards, >1 m horizontal accuracy, 4-12 mths old, from Local Jurisdictions, County LAFCOs)
    - Street Addressing (meets NENA Standard from a UNETRANS derived data model, >1 m horizontal accuracy, 4-12 mths old, from Local Governments)

- The top 5 regional datasets this region would like to develop next are:
    - Buildings and Facilities
    - Flood Hazards
    - Vegetation
    - Biological Resources
    - Wetlands

3) Regional Implementation
- This region has used the Imagery for the Nation, the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative.

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- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Provide leadership in the establishment of GIS technology and data standards
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems Coordinate the investment of State Agency dollars

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

B. Bay Area Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity
- Technology is not meeting business needs in networking, data exchange, data storage, software or hardware capabilities.
- Funding is considered minimal. One time grants are the only listed funding mechanism.
- There is no staff available to support GIS efforts. There are adequate volunteers.
- Strong executive support is often available.
- There is a formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- This region has none of the seven core framework and eleven California-centric data theme datasets available.
- The top 5 regional datasets this region would like to develop next are:
    - Cadastral
    - Ortho Imagery
    - Transportation
    - Street Addressing
    - Buildings and Facilities

3) Regional Implementation
- This region has used the Imagery for the Nation, the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data

- Provide leadership in the development and sharing of geospatial web services and tool
- Provide leadership in the establishment of GIS technology and data standards
- Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
- Coordinate appropriate use of GIS through outreach and networking of potential and expert users
- Facilitate training for skills related to use and development of geospatial information and geographic information systems
- Coordinate and administer grants related to geospatial information and geographic information systems
- Act as Chief Marketing Director, GIO must know client business

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

C. Humboldt Area Regional GIS Collaborative (Workshop Representation)

1) Regional Organizational Capacity
- Technology is suitable for networking, data exchange, data storage, software or hardware capabilities.
- Funding is ranked 3 (on a 1 to 4 scale, with 4 minimal). Support from ABAG, AMBAG, or SaCOG is the only listed funding mechanism.
- There is less than five staff available to support GIS efforts. There are minimal on-site paid employees.
- Strong executive support is occasionally available.
- There is no formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
  - Cadastral (no standards, >1 m horizontal accuracy, 4-12 mths old, digitized by jurisdiction staff)
  - Transportation (no standards, >1 m horizontal accuracy, 4-12 mths old, from Tiger, DLG)
  - Governmental Units (no standards, >1 m horizontal accuracy, 4-12 mths old, from parcels)
  - Street Addressing (no standards, > 1 m horizontal accuracy, 4-12 mths old, from parcel site address)
  - Flood Hazards (no standards, > 1 m horizontal accuracy, >1 year old, from FEMA Q3)
  -
- The top 5 regional datasets this region would like to develop next are:
  - Ortho Imagery
  - Elevation

- Geodetic Control
- Public Land Conveyance Records
- Soils

3) Regional Implementation

- This region has used the Imagery for the Nation, the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Provide leadership in the establishment of GIS technology and data standards
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate appropriate use of GIS through outreach and networking of potential and expert users
    - Facilitate training for skills related to use and development of geospatial information and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems

D. San Joaquin Valley Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity

- Technology is not meeting business needs in the area of data exchange, but is considered suitable in regards to networking, data storage, hardware, and software capabilities.
- Funding is ranked 3 (on a 1 to 4 scale, with 4 minimal). There are no funding mechanisms in place.
- There is less than five staff available to support GIS efforts. There are adequate on-site employees, minimal retained consultants, and minimal volunteers.
- Strong executive support is occasionally available.
- There is no formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure

- The following datasets are available for this region:
    - Elevation (no standards, >1 m horizontal accuracy, >1 year old, from USGS DEM)
- The top 5 regional datasets this region would like to develop next are:
    - Elevation
    - Street Addressing
    - Utilities

- Flood Hazards
- Biological Resources

3) Regional Implementation

- This region has used the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative, or the Imagery for the Nation.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
  - Provide leadership in the development and sharing of geospatial data
  - Provide leadership in the development and sharing of geospatial web services and tool
  - Provide leadership in the establishment of GIS technology and data standards
  - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
  - Coordinate and administer grants related to geospatial information and geographic information systems
- This region believes the GIO should be placed in a state agency that is programmatically neutral with broad, enterprise wide responsibilities --e.g., the State Library, the Governors' Office of Planning and Research (OPR) or the Department of Technology Services (DTS)

E. Sierra Nevada Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity

- Technology is not meeting business needs in the areas of data storage, data exchange, hardware, or software, but is considered suitable in regards to networking capabilities.
- Funding is ranked 2 (on a 1 to 4 scale, with 4 minimal). Cost sharing agreements are the only listed funding mechanism.
- There is less than five staff available to support GIS efforts. There are adequate on-site employees and minimal volunteers.
- Strong executive support is often available.
- There is a formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure

- The following datasets are available for this region:
  - Ortho Imagery (no standards, 0.5-1.0 m horizontal accuracy, >1 year old, from air photo)
  - Elevation (no standards, >1 m horizontal accuracy, >1 year old, from USGS)
  - Governmental Units (no standards, >1 m horizontal accuracy, 1-3 mths old, from County assessor and lafco records)

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- Flood Hazards (no standards, >1 m horizontal accuracy, >1 year old, from FEMA)
- Cultural and Demographic Statistics (no standards, >1 m horizontal accuracy, >1 year old, from Census Bureau)
- The top 5 regional datasets this region would like to develop next are:
  - Cadastral
  - Ortho Imagery
  - Transportation
  - Hydrography
  - Geodetic Control
  - Street Addressing

3) Regional Implementation
- This region has used the Imagery of the Nation, but not the California Spatial Library, the California Environmental Information Catalog, or the 50 States Initiative.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
  - Provide leadership in the development and sharing of geospatial data
  - Provide leadership in the development and sharing of geospatial web services and tool
  - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
  - Coordinate appropriate use of GIS through outreach and networking of potential and expert users
  - Coordinate and administer grants related to geospatial information and geographic information systems
- This region believes the GIO should be placed in the new office of the State's Chief Information Officer

II. REGIONAL WORKSHOP 2 SUMMARY

ATTENDENCE

Workshop 2 had representation from Sacramento Regional Collaborative, Bay Area Regional GIS Council, Humboldt Area GIS Collaborative, San Joaquin Valley Regional GIS Council, and Sierra Nevada Regional GIS Council. In all, 29 individuals and 5 Collaboratives were present for the discussion. 7 individuals were from local government, 12 from state government, 5 from federal government, and 8 from private entities.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 2

Sacramento, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Resources • Wonderful human capital • Best Practices (some with champions) • Geospatially enabling a business line • Largest of investment in GIS (by State) • Wide adoption/ momentum • Heavy GIS activity (most of worlds software created here)	• Not all counties have widely adopted GIS	• Consider that we are building a base resouces for the state not just some GIS datasets	
Data Sharing • Many of the core seven data sets and some of the CA-centric eleven are created at the local level.	• Regionals not all inclusve; counties within regionals and full California coverage • No incentive to participate at State level	• A lot of IT infrastructure needs to be developed to support a CA-SDI. • Google as a data sharing resource.	• The top several core datasets are created at the local level. Filtering them up to the state could/will be a challenge. • The locals and regions do not care about public domain data. They care about sharing data with their own constituents and sometimes surrounding neighbor
Communication/Coordination • There was a lot of feedback on how to form the collaboratives and counties ultimately decided. • Move towards (stopped) saying GIS and focus on solutions	• There is a disconnect between the state and federal governments, and smaller groups. • The regional collaborative structure may not be representative of the entire footprint. • Not all parts of the state have regional collaboratives • Not a common clear message	• The State stated that they, as a facilitator, need to articulate more clearly what their objectives are. The Collaboratives could then respond whether they agreed. • There is an opportunity for regional collaboratives to meet with state government. This is best pursued by CA GIS Council	• There is no belief in the business potential of GIS. Some people have stopped saying "GIS" and simply talk about what information you can give them. As you go up management you can speak less technically. • Imperial County works closely

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
		and CGIA. • There is an opportunity to expand the Regional Collaboratives to cover every county. • Regional Collaboratives should look at how they're composed and make appropriate adjustments. • Use NSGIC postcard templates	within itself and doesn't feel a need to "define" itself.
Funding • California has the largest investment in GIS of any state and the majority of local governments are adopting it and seeing it as a program they must have. • Google and GPS have advanced GIS and the public's perception.	• There are no incentives for the regional collaboratives. This is a program where the feds and the state are asking for information, but a formal structure is not in place. • There is no significant funding for a lot of the things the regions would like to see happen.	• There are bond measures to support infrastructure. Some of this money might be available for data development. • When advocating for GIS funding, it is best to get the point across in 55 words or less; tied to a business purpose • Need to have someone at the top advocating for GIS and all of its benefits.	• Lack of recurring funding year to year
Data Development • Plenty of innovative technology in place. • Tremendous data development activites; many redundant and many not coordinated	• Disconnected initiatives	• Collaboration for a common goal	• Money is the best incentive but some localities do not trust the state. There is also the question of where the money would come from and where it would go. • There's a threat that this grant will run and things will go back to status quo.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 2
Sacramento, CA

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

The regions expressed that they would be supportive of data standards for the data that has not yet been developed or are not already in development. There would be a large cost to transition data from one format to another. It would be beneficial if the cities and counties did not have to adopt the standard, that this would take place at the regional level.

It was reinforced that there must be something given back to the local governments from the state if there is any cost involved. Otherwise this sounds like an unfunded mandate. Regional Collaboratives, however, are a unique entity because of how they are defined.

Discussion debated how the standards should be developed. Should local standards drive regional standards or should standards be driven down from federal government to state government to local government. There is generally a "disrespect" from local government towards state initiative as they have been burnt previously. Why would standards be different? BAR-GC has agreed to a regional standard which is a major accomplishment.

None of the regions want to develop their own standards. They would like to use a template. It would be beneficial to have a regional template that illustrates a statewide standard.

There was positive feedback from the regions who confirmed that they would like to facilitate datasharing within and among regions, as long as it is not burdening. If the standards are difficult for local entities, the state should provide technical tools, resources, and funding to help them adopt standards.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

The question was posed, is service oriented architecture a reality. Nationally there is a lot operating. Representatives for the state described federated data efforts as the most likely given the IT environment that exists today. There was no doubt that it's desirable, but questions were raised about feasibility given that there are currently no standards.

There has been incremental data development for BAR-GC. They would like to build a regional data repository. They would benefit from a state level strategic plan and state efforts to help regional collaboratives build those data repositories. Data sharing could then be taken to another level. They would need outside support to build these repositories until it is self funded by users.

There has been a federated parcel data model that is ready to be adopted.

IMPLEMENTATION

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 2
Sacramento, CA

1) State Support

Active support from the state could involve:

- Hosting data similar to CALSIL.
- Acting as an authoritative verifier of value and quality of data.
- Confirm that data meets a certain standard through metadata.
- Initiating meetings of agencies at similar levels
- Provide a "state seal of approval." This is low cast and provides tremendous value at the local level and can encourage maintenance of good data sets.
- Provide funding for regions to develop data repositories.
- Provide architecture that allows local government to view data at a regional level.
- Provide a Service Oriented Architecture (SOA)

The state emphasized that the local government/regional collaboratives should show a reason that the state should fund something. They should use appropriate business processes (NSGIC Business Case template) to outline this.

The priorities for Caltrans is currently climate change and developing a blueprint (land use planning).

2) Governance

There should be an office established that can provide services, not just watch on the sidelines.

State workshop attendees mentioned that the trend is that more local governments are controlling funding. Caltrans is trying to enroll local governments. It was also mentioned that the state wouldn't get a GIO until it gets a CIO. Getting a GIO without a CIO is not going to go anywhere. Who actually has incentive to pay for all of this? Could a CIO become a champion for GIS without a GIO? One example is LA County, where GIS is growing fast. The challenge there is coordination. People understand GIS, but coordination challenges have prevented them from being a far along as they would like.

State workshop attendees mentioned that their next big GIS project is the census. This is the next project where GIS has a justification for funding.

The question was posed, what do you need for the CA GIS Council? Responses included:

- Based upon funding (which is none) they are doing pretty well.
- They should provide guidance on how to solidify collaboration and take it to the next level.
- They should provide guidance on how to write agreements or arrangements.
- The council needs to gain more official status. They should have the status of a board.

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- There are no ties to policy. Nobody is going to report up what happened in the meetings. In order to have official standings, they need to follow public meeting laws, which they don't currently do.
- They should facilitate communication with counties that are not yet part of a regional collaborative.
- GIS Council should represent traditional GIS, information technology, and policy interests.

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CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #3:
Carson, CA
October 24, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Baker

Prepared on: **October 26, 2007**

I. PREWORKSHOP SURVEY RESULTS

A. SoCal GIS
1) Regional Organizational Capacity
- Technology is suitable for networking, data storage, data exchange, hardware, and software capabilities.
- Funding is ranked 3 on a 1 to 4 (minimal) scale. Cost sharing agreements are the only listed funding mechanism.
- There are <=5 staff available to support GIS efforts. There are minimal on-site paid employees, and no retained consultants or volunteers.
- Strong executive support is often available.
- There is no formal process for project oversight.

2) California Spatial Data Infrastructure
- This region has none of the seven core framework and eleven California-centric data theme datasets available.

- The top 5 regional datasets this region would like to develop next are:
    - Ortho Imagery
    - Transportation
    - Street Addressing
    - Utilities
    - Flood Hazards

3) Regional Implementation
- This region has used the California Spatial Library but not the 50 States Initiative, the Imagery for the Nation or the California Environmental Information Catalog,
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Coordinate and administer grants related to geospatial information and geographic information systems

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

II. REGIONAL WORKSHOP 3 SUMMARY

ATTENDENCE

Workshop 3 had representation from SoCalGIS and the Channel Islands Regional GIS Collaborative (one representative). In all, 15 individuals and two Collaboratives were present for the discussion. 7 individuals were from local government, 3 from state government, 1 from federal government, and 5 from private entities.

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CALIFORNIA PHASE II STRATEGIC PLAN- REGIONAL WORKSHOP 3
Carson, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Communication/Coordination • There are plenty of initiatives, funding, staff, and expertise. Coordination is starting to improve. • Los Angeles County now has a GIO so coordination has improved and they meet regularly.	• There is still a challenge with coordinating all regional efforts. • It is hard to determine the GIS representative for an area, and there is not always a representative or direct contact with the State. • The large size of Los Angeles County makes coordination and communication difficult. • There is no formal structure of who's in charge of what. • Many people hear about meetings by word of mouth. Could there be a more formalized process? • No Orange County representation at this workshop.	• It would be beneficial to have a city representative on the National Council. The city extent is as large as some states. • SCAG could communicate and promote their datasets better through SoCal GIS. • Enhance the current Regional Collaborative contact list to a larger audience. • Its been 6 months since there was a SoCal GIS meeting, because its hard to get somebody to host a meeting. Private companies are interested in hosting.	•
Data Sharing • SCAG has a data task force.	• Data links on websites do not always work. Data should be stored on site. CASIL data is often old, not accurate, or not detailed enough. • It is hard to find data (especially free data). Some information might be available, but not the necessary directions for use. • Los Angeles County has huge Departments creating and maintaining data sets. There are also holes in data available.	• The state could provide more links to more places where data is available and the formats that they are in. • Direction on how to convert census.gov data. • SCAG is making a website with links to mapping applications and some data. This could be built upon. • CASIL appears to not support data sharing unless it has a	• They are currently licensing most data from private vendors because there is not enough money to create and maintain data sets. • Unable to move licensed third party data sets to CASIL. • The county has certain large departments that are responsible for datasets but aren't always involved in collaborative efforts. Its takes

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
	• A lot of people don't realize that SCAG has regional datasets and keeps them current.	statewide coverage.	time to figure out who maintains and updates data and who is responsible for getting it to the next level.
Funding •	• The ability to leverage federal funding needs to be improved. • We don't have a regional focus to get grants to build/maintain data sets.	• It would be beneficial to hire a grantwriter.	•
Data Development • Los Angeles County and the City of Los Angeles have a good Imagery Consortium project. They have talked about developing other datasets such as addresses and building footprints.	•	• Meetings without a goal will serve no purpose. Developing specific data layers could be a goal.	

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 3
Carson, CA   10/24/07

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

LA County confirmed that for the 7 core data themes, they have:
- Cadastral
- Imagery
- Transportation
- Elevation
- Hydrography
- Geodetic Control
- Governmental Units

and for the 11 CA centric data themes, they have:
- Street Addressing (partial)
- Utilities (unsure)
- Public Land Conveyance Records (unsure)
- Buildings and Facilities (partial)
- Flood Hazards
- Vegetation (from the state)
- Biological Resources
- Cultural and Demographic Statistics (census)
- Wetlands (boundaries)
- Earth Cover

Because regional and local dataset standards are typically higher (accuracy, feature types, and attributes) than state standards, regions would be willing to implement standards. A lack of standardized schemas, feature classes and attributes is on the largest limitations in the ability to roll data up from the local to the state level. At the moment there has not yet been discussion regarding whose standards and what kind of standards will be used. Culver City is look at using spatial data standards and beginning a data migration standard. SCAG noted that they have 5 of the 6 county parcel data sets for their charter that can be shared for emergency response. SCAG also noted they use FGDC standards.

The question was asked, are there federal or regional demands that require sharing data or specific data formats? Answers included yes in the areas of:

Emergency Response. This is a request that is turning into a routine. The biggest request is for parcels, but Census data is another popular data set requested.

SCAG must put out regional transportation improvement projects and they have just built a web application that provides this data.

States share information relating to the West Nile Virus. www.westnile.ca.gov is coordinated at the state level by contacting specific agencies who have GPSed the necessary information.

Vitals on death/birth certificates and Sheriff/sex offender information. It is difficult to get spatial data for a lot of these data sets and regeocoding is a big undertaking.

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The Joint Regional Information Center performs intelligence gathering and acquires public works, flood control, and statewide endangered species, but much of this information is not made available to the public.

Public Works supports flood control requests.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

There is a question of who will provide funding and be responsible for the servers if a federated data model is adopted. Local infrastructure is less of a concern than staffing. SCAG (which covers Ventura, LA, Riverside, San Bernardino, Orange, and Imperial) has staff but not enough bandwidth. Consultants send hard drives to transfer data. The goal of SCAG is to be the regional information host. In order to make data compatible and understandable, they write metadata when it is not available. They do have a wide range of data for their region.

There needs to be a repository for data for smaller entities. SCAG is currently trying to build a portal. Funding agencies have to make it a priority for someone to be the "node."

The fires will highlight the need for action, but still, who will pay for it? It's desirable but not feasible. Money goes to the Joint Regional Intelligence Center. They call you to obtain data but it is difficult to see the data when they are done; little likelyhood of bi-directional data sharing.

Consistency and frequency for updating data is a problem for CIRGIS. They have created a "least common denominator" data model, but problems arise when you update from data sources with very different schema. Funding is necessary but not available.

IMPLEMENTATION

1) State Support

Regional Collaboratives would like, from the state:

- **Legislature:** The state should develop legislature that supports the sharing of data, especially among government agencies. Currently, some government agencies charge other government agencies for data, and this should not happen.

- **Legal:** The courts rule against Assessors who charge for their parcel base sets a legal foundation for data sharing. Expand the public records act to share information especially between government agencies.

- **Standards**: Without standards it is difficult to compare parcels across county lines. Someone needs to establish a "least common denominator" framework that will allow for this process. This model could be designed others could predictably extract and load data. Others confirmed that it would be helpful to have a basic standard of fields and structure for when they are developing data and act as a guide to update legacy data.

  Every three years SCAG updates general plans and standards. This process takes awhile because they receive data in all different formats. Conversely, Counties then stated that

they have to reformat SCAG data when they receive it, to match their format. There is a
need for a standard or previously established mapping to get from here to there.

- **Money/Grants:** Regions would like the state to act as a statewide clearinghouse, and
  fund staff who would regional and local data and format to a common standard.

- **Act as an advocate for GIS:** An State individual should serve as an advocate for GIS
  and talk about business reasons why agencies should invest (even if only by example).

2) Governance

A discussion began around the need and roles of a potential GIO. The comment was made, in the
absence of a GIO, the CIO should be asked to take one some of these responsibilities.

In the County, the GIO position resulted from an assessment and evaluation that ultimately
provided justification for the position. The major argument for the position was that there's a lot
of GIS that's not coordinated.

The question was asked, what could the council be doing since there is not currently a GIO?
Answers included:

- There is a need for more publicity. The Council should find more avenues that let GIS
  practitioners know about GIS related organizations (SoCal GIS, etc.) and vice versa.
  Even if the money were available, there is no way to spread the word. Increase the
  relevance of the CA GIS Council to regional and local agencies. While travel restrictions
  are apparent there is no substitute for face time.

- The Council is/was made up of mostly State employees that are/were removed from the
  activities within the regions. The regions would like representation. There is a lot of
  history behind this issue. The Council has been restructured several times in the past.

The region believes there is incredible value to a CA-SDI. Currently, it is difficult to quickly find
data when necessary. Google or USGS map services are good options if you need to go outside
your boundaries.

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CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #4:
Ventura, CA
October 25, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Baker

Prepared on: **October 29, 2007**

I. PREWORKSHOP SURVEY RESULTS

A. Channel Islands Regional GIS Collaborative

1) Regional Organizational Capacity

- Technology is not meeting business needs in the areas of networking or data exchange capabilities, but is suitable for data storage, hardware, and software capabilities.
- Funding is ranked 3 on a 1 to 4 (minimal) scale. CIRGIS is a 501©4 and receives CAP grants and income from teaching ArcGIS classes.
- There are no staff available to support GIS efforts. There are minimal retained consultants and adequate volunteers.
- Strong executive support is seldom available.
- There is no formal process for project oversight.

2) California Spatial Data Infrastructure

- The following datasets are available for this region:
  - Cadastral (no standards, 0.5-1.0 m horizontal accuracy, >1 yr old, from member cities and data requests from counties)
  - Ortho Imagery (no standards, >1 m horizontal accuracy, >1 year old, from AirphotUSA.)
  - Transportation (no standards, >1.0m horizontal accuracy, >1 year old, from member cities and counties)
  - Governmental Units (no standards, >1 m horizontal accuracy, >1 year old, from various city and county members)
  - Street Addressing (no standards, >1 m horizontal accuracy, >1 year old, from address point data from selected cities)
  - Buildings and Facilities (no standards, >1m horizontal accuracy, >1 year old, from two member cities only)

- The top 5 regional datasets this region would like to develop next are:
  - Elevation
  - Hydrography
  - Flood Hazards
  - Cultural and Demographic Statistics
  - Earth Cover

3) Regional Implementation

- This region has used the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative, or the Imagery for the Nation.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
  - Provide leadership in the development and sharing of geospatial data
  - Provide leadership in the development and sharing of geospatial web services and tool

- Provide leadership in the establishment of GIS technology and data standards
- Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
- Coordinate appropriate use of GIS through outreach and networking of potential and expert users
- Facilitate training for skills related to use and development of geospatial information and geographic information systems
- Coordinate and administer grants related to geospatial information and geographic information systems

- This region believes the GIO should be placed in a state program agency (e.g., Resources, Health and Human Services, Environmental Protection, Business, Transportation and Housing, etc.)

II.REGIONAL WORKSHOP 1 SUMMARY

ATTENDENCE

Workshop 4 had representation from the Channel Islands Regional GIS Collaborative. In all, 10 individuals and one Collaborative were present for the discussion. 3 individuals were from local government, 2 from state government, 1 from federal government, and 5 from private entities.

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 4
Ventura, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Communication/Coordination • CIRGIS has had successful collaborations in the last few years. 3 ortho programs and a sustainable model. • There has been a lot of engagement by the GIS community. • Both Ventira and Santa Barbara counties now have GIOs. • Ventura interacts with other public agencies. Its not always GIS related but there are good established relationships and data agreements. Often biological projects cross borders so its beneficial to share data. • Both counties confirmed that they have a well developed source of GIS staff throughout the county government in a range of departments. It's important to have a good "critical mass."	• Relying on future grants for technology enhancements and data refreshes	• There is plenty of opportunity to grow. • There is a new program in Santa Barbara starting with people, hardware, and software. There is a lot of opportunity for collaboration with the Regional Collaborative. • Goal is to have all of the cities become members of CIRGIS. • There is a UCSB campus GIS program that is highly regarded but does not have much interaction outside of the school. • There is an opportunity to collaborate with LA County LARAIT Collaborative to collect orthoimagery and Pictommetry for the county.	• The City of Thousand Oaks on the border with LA County does not currently collaborate at all with LA.
Data Sharing • They have a data server for the regional collaborative that was heavily used during the fires (actually overloaded). • Data sharing on biological, streets, and boundaries (agency to agency interactions)	•	• Cal State Channel Islands is building a GIS lab. This, along with student assistance work could be a resource.	•
Funding			

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
• Have established a 501c4CERGIS obtained 3 CAP Grants relation to 1) Organizational, 2) Metadata, and 3) National Map: Model Sustained Funding • Ventura has politicians that are generally well informed about GIS and its value.	• Funding is still a weakness, even in Ventura. "Selling the idea" is not a direct link to the money. There is one bucket that must fund everyone.	• There is always the opportunity to get more grants. • Ventura's goal is to be financially self sufficient. They act and operate like a business, and look for opportunities for revenue generation and sharing of costs.	• Cost sharing • Revenue generation
Data Development •	• CIRGIS doesn't yet have a plan for the next six months. They have been opportunistic in the past, and don't know what opportunities will arise in the future. They work in a cycle- data development, planning (determining what's important next). They are now in the planning stage. • CIRGIS lacks hard formed processes. The county has processes which they can learn from. • Have a hybrid centerline with address points • Ventura County has street centerlines but no home-type centerline details • Ventura County needs ground control; even more important than a Master Address Database.	• There needs to be someone to work with the board and build confidence. • The counties would like a master address database. There is currently not one database that hass all valid addresses in a jurisdiction. Ventura is in the process of compiling the pieces to begin updating this database. • CIRGIS wants to come up with a minimalist data model for street addressing that will be regionally applicable. An ad hoc group met and is working on such a data model. • Good DEM data is a high priority.	

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

CIRGIS would love for there to be data standards. This would be beneficial to make data interoperable both across and within regions. They have already gone to some effort to develop their own model (and have their own Region interoperable standard), however are open to suggestions.

It is difficult for local agencies to use state/regional data because it is not always to the local level of detail. Attendees noted that the State would be the newcomer and could work towards all Regionals being compatible with a minimum common standard.

Ventura has mature GIS data with hundreds of applications looking at the data including social services, health, and justice. Yes they are interested in standards that allow them to be interoperable. They would adopt those standards where the minimum is not below their minimum standard. They do not want a standard that would negatively impact the entire environment.

The question was asked, are there processes or programs that you have to support that require aggregated data?

- Ventura County has many programs with both state and federal government where data is shared back and forth with varying levels of aggregation. These programs are related to the justice systems, health, social services, etc.

- It was noted that the state is a newcomer in this process and must approach this as a collaboration to help define the standards. The effort should start at the local level with the state ultimately adopting their standards.

- The City of Oxnard noted that when they developed their data, there were not clear cut standards and if there had been, it would've been easy to adopt. Even now it would be relatively easy to adopt a standard, but this must be voluntary or with a focus at the local level.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

Ventura County believes the federated data model is the only model that will work. Having many different central warehouses will cause confusion. Now is the time to implement the federated data model. They are now building data, so this is the best time to set standards. Now is the time when they'll get the best bang for their buck, so they are 100% behind it.

The last CIRGIS cap grant was to help build these kinds of services. They used federal standards and built services that are registered in Geospatial One Stop. They hit multiple data sources across the internet which feed into this service. Using a web service gives you a level of independence from the data format.

There was concern expressed over who would do the quality control checks for data in a federated data model. There was some encouragement for having data hosted in a central place.

It has been recognized at the state level, in Sacramento, that the regions can provide "bottom-up" data.

California needs bigger CAP grants. Our State size necessitates more money than is allocated in a CAP grant.

IMPLEMENTATION

1) State Support

It was noted that there are localities that dislike "statewide values" and would resist even help from the state.

The question was asked, what can the state do for you? Answers included:

- It would be nice to have a set of standards or goals regarding what data layers you should have etc. What should the city, county, and state do together? If the state filled that gap, it would be useful.

- The state should serve as a lead on legal interpretation and provide guidance on legal issues or proprietary values. The CA Attorney General opinion should be a positive impact. More data sets available and reaching 100% county compliance.

- The state should run quality control checks when people are submitting data and metadata to ensure that all of the elements are there and the data remains stable. They should encourage departments to have a specific email address for this designated purpose, not an individual's address which becomes inactive when that person leaves.

- The question was asked, who's going to pay for this. The local reaction will perceive this as an unfunded mandate.

- Discussion on establishing a common email address such as parcel@countyname and parcel@cityname so when data is needed it is staff independent and will be received.

2) Governance

In the absence of a GIO, the GIS Council can:

Communicate information about recognized best practices. They can help spread the word about what other regions are up to.

Ventura County commented that they are self contained. They have the data they need because they have created it. They envision the state GIO doing what the state needs to do their business. The state needs to do a better job at planning on any level. If the state

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needs regional data, they need to determine how best local and county government can feed the data to them. They see the vision for the state GIO as for the state's benefit. The state GIO is there to help the state work with other states and the federal government. If the state GIO doesn't determine what they need, the regions can't help them.

While you can temporarily work without a GIO, ultimately you will need one. Without a GIO you will miss other opportunities. It will take time to convince people of the need. Otherwise we'll keep having these workshops. There's a paper from 15 years ago that is remarkably similar to what's being done now. The benefit of these councils is that the GIO won't be starting from scratch. Work quickly to establish a central coordinating authority.

Commentary around the CA GIS Council:

At the regional level there is not a lot known about the GIS Council. They have little power and a huge mandate to accomplish things. This is a huge area of potential responsibility. It would help for them to focus on just a few things. Prioritization can be the most difficult task. The focus could be on homeland security because that's where the money is.

When asked if they felt like they were represented in the Council, the academics spoke up and indicated yes however there was discussion on lack of Regional or County participation.

Council should better communicate via the web or a Newsletter.

CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #5:
Visalia, CA
November 6, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Baker

Prepared on: **November 8, 2007**

I. PREWORKSHOP SURVEY RESULTS

A. San Joaquin Valley Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity
- Technology is not meeting business needs in data exchange, data storage, or hardware capabilities, but is suitable for networking, data storage, hardware and software capabilities.
- Funding is ranked 3 (on a 1 to 4 scale, with 4 minimal). There are no funding mechanisms in place to support regional GIS efforts.
- There are less than 5 staff available to support GIS efforts. There are adequate onsite paid employees and minimal retained consultants and volunteers.
- Strong executive support is occasionally available.
- There is no formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
    - Elevation (no standards, >1 m horizontal accuracy, >1 year old, from USGS DEM)

- The top 5 regional datasets this region would like to develop next are:
    - Elevation
    - Street Addressing
    - Utilities
    - Flood Hazards
    - Biological Resources

3) Regional Implementation
- This region has used the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative Imagery for the Nation.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Provide leadership in the establishment of GIS technology and data standards
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems

- This region believes the GIO should be placed in a state agency that is programmatically neutral with broad, enterprise wide responsibilities – e.g., the

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State Library, the Governors' Office of Planning and Research (OPR) or the
Department of Technology Services (DTS).

II. REGIONAL WORKSHOP 2 SUMMARY

ATTENDENCE

Workshop 5 had exclusive representation from the San Joaquin Valley Regional GIS
Collaborative with 10 attendees. Eight individuals were from local government and 2
individuals were from private entities.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 5
Visalia, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Communication/Coordination • Valleywide, there is strong collaborative effort between four or five counties.	• They are missing Stanislaus or San Joaquin. The northern counties feel closer to Sacramento. • Tulare makes effort to stay connected to Kern County but it is challenging.	• They would participate in regional efforts if someone organized them, but they aren't going to organize it themselves.	• ISIS Center is trending down and may impact regional efforts.
Data Sharing • Data sharing strong with no formal agreements.	• Kings and Tulare communicate but have no formal data sharing agreements. • There are no funds for regional data, and in reality, counties only need the data that are close to their borders. • Regional collaboration is difficult because the data attributes are not standardized and the fields don't match. It is hard to integrate the data.	• There is an opportunity to continue working together iwht data sharing if they can find a "trigger" to initiate the coordination. A trigger such as pesticides, which might have funding available, was suggested.	• There has not been enough pre-thought on how to standardize data. • There was an agreement in place between Visalia and Tulare but this was nullified by the CA Attorney General opinion.
Funding • Tulare County is able to bill the COG for their time because they're embedded in their agency. This creates a funding mechanism. • The budget has been improving for Tulare County.	• This area is more reactive than proactive. There are no funding mechanisms to do anything regionally. • It is difficult to get grants for regional data development because of the boundaries. There is no grant entity, so they can't receive and administer grants. • Caltrans funds go to COGS not to	• There needs to be a funding mechanism for maintaining and developing data.	• Funding that is provided by Caltrans goes to COG or CAG and does not always go those who are building/maintaining the data.

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
	those who build/sustain data.		
Data Development • The biggest regional efforts have come from the aerial imagery program. The ISIS center provides motivation for data development (however they are now in transition) • King is taking the lead in developing GIS data countywide. They are bringing cities together to bolster countywide efforts. This gives building blocks later for regional efforts.	• No common standard	• Caltrans UPLAN requires that data be created. Missed opportunity to build out to regional usefulness.	• For UPLAN, Caltrans assumed that data existed, but it wasn't always available for every county.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 5
Visalia, CA

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

San Joaquin Regional Collaborative is willing to adopt standards, depending on the difficulty. It is difficult to change what they are already doing. If the standards are significantly different from what they already have, then it's really hard.

Tulare County is striving more for consistency than accuracy of data. Absolute accuracy would be great but it's very expensive.

The question was asked, are there processes or programs that you have to support that require aggregated data?

- UPLAN was the first program that came to mind. There might be others, but there is no communication about them.

- The only data they share with the state is Williamson Act data. They are required to provide lands that fall under the Williamson Act. (The Williamson Act is a tax relief measure for owners of farmland who guarantee their land will remain farmland for at least ten years.)

- The comment was made that they should also be developing a good address system for 911 Emergency Response.

- They provide data to the Census Bureau, via LUCA, with minimal data received back. This makes it problematic to contribute data. Also, the census block geometry is a challenge. The counties should be involved in developing this geometry.

- The USDA and Agricultural Agency have data requirements that are served by the region.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

Attendees commented that the only way data can be accurate is at the local level.

Consistency is a problem from City to county, and from County to regional or state.

Sharing data isn't going to be consistent without a standardized anchoring system.

There is a need for a regional agency to hold the data. The counties don't have adequate server space for regioanl data sets.

Local politician's are also opposed to regional data, and there's no regional agency to work with.

There needs to be a place where you can share information. There are data sets that other counties could benefit from, but no place to share them.

An example of Tulare County's strength is in developing their own data, parcels, etc. If they could work with a regional agency who had resources such as web programmers and large data repositories, all would benefit.

The state could host the data and do the web programming but there'd be a lot of work involved in integrating all of the data. In the future, the regional and counties would develop their data differently.

The ISIS center could host the data, but they require a fee which no one can/could afford. It makes more sense to push data to the state unless the state is willing to fund a regional hosting model.

There is a need for sustainability. Grants are not ongoing guaranteed funding.

IMPLEMENTATION

1) State Support

The question was asked, what can the state do for you? Responses included:

They would need to provide funding and a directive. They need to provide direction in addition to funds.

The more important regional question is what does the state need from the regional collaboratives and how are they going to pay for it? They need to provide incentive to generate more accurate data.

There is also a concern about equity and how to compensate county's equally. If one county does not have data or GIS, are they funded to establish GIS and data? For the counties who already have GIS and data sets, how will they be compensated or are they expected to just donate their data?

The state should make their plans more clear to the regional collaboratives. How is the process sustainable and who is responsible for keeping data up-to-date? If data is updated frequently, the cost becomes expensive. The counties main responsibility is to the taxpayers in their area, not regional or state initiatives.

Emergency preparedness is one way to get money. If there was a disaster and counties had to compile data, right now they couldn't do it quickly or easily, or at all.

Attendees noted the Assessors Office collects taxes so why put effort into improving GIS?

Attendees noted that Caltrans is providing TeleAtlas streets to government agencies. This is a valuable resource and a good model.

There needs to be more of a focus on streets and point addresses as opposed to parcels. This will provide a better tie into government agencies with more money (homeland security grant funds). If the state takes a stronger role in making streets and address point

the main datasets to develop, then the streets tie better to geodetic control. The development community is the biggest side pushing for parcels, but street and addressing is more related to human lives, which is where the money is.

Related to the topic above, discussion should take place and a standards developed on how to model multi-tenant units. Model as one point or actual, such as fifty points?

The state could improve its own use of the technology. There are places that should be using GIS and are not. There are also instances when the state requires data from counties and then they put it in a file cabinet and they don't look at it again.

2) Governance

Without a GIO it is a "need-driven system." Whoever needs something and can pay for it will get it done. There was discussion around the power of "muddling" through. Regional collaboratives continue to cope with what is needed.

Commentary around the CA GIS Council:

It would help if the Council gave direction regarding the development of state standards.

Attendees asked, why does the state need parcel sets? They don't perform land use planning.

Aerials are updated frequently, parcels in their current state are imperfect but useful, so the top priority should be address data sets.

CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #6:
Hayward, CA
November 8, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

Prepared on: **November 20, 2007**

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 6
Hayward, CA

I. PREWORKSHOP SURVEY RESULTS

A. Bay Area Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity
- Technology is not meeting business needs in networking, data exchange, data storage, software or hardware capabilities.
- Funding is considered minimal. One time grants are the only listed funding mechanism.
- There is no staff available to support GIS efforts. There are adequate volunteers.
- Strong executive support is often available.
- There is a formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- This region has none of the seven core framework and eleven California-centric data theme datasets available.
- The top 5 regional datasets this region would like to develop next are:
    - Cadastral
    - Ortho Imagery
    - Transportation
    - Street Addressing
    - Buildings and Facilities

3) Regional Implementation
- This region has used the Imagery for the Nation, the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Provide leadership in the establishment of GIS technology and data standards
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate appropriate use of GIS through outreach and networking of potential and expert users
    - Facilitate training for skills related to use and development of geospatial information and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems
    - Act as Chief Marketing Director, GIO must know client business

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

B. Central Coast Joint Data Committee (Workshop Representation)

1) Regional Organizational Capacity
- Technology is meeting business needs in there areas of networking, data exchange, data storage, software or hardware capabilities.

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- Funding is considered minimal. Support from ABAG, AMBA, SaCOG and occasional FGDC grants are the only listed funding mechanism.
- There is less than 5 staff available to support GIS efforts. There are adequate on-site paid employees, minimal retained consultants, and minimal volunteers.
- Strong executive support is often available.
- There is a formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
    - Orthoimagery (no standards, >1 m horizontal accuracy, >1 yr old, from 2003 ortho imagery created by Sanborn)
- The top 5 regional datasets this region would like to develop next are:
    - Cadastral
    - Ortho Imagery
    - Transportation
    - Elevation
    - Street Addressing

3) Regional Implementation
- This region has used the Imagery for the Nation, and the California Environmental Information Catalog, but not the 50 States Initiative, or the California Spatial Library.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Provide leadership in the development and sharing of geospatial data
    - Provide leadership in the development and sharing of geospatial web services and tool
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate appropriate use of GIS through outreach and networking of potential and expert users
    - Facilitate training for skills related to use and development of geospatial information and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems
    - Coordinate, streamline, standardize GIS in state agencies.

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

II. REGIONAL WORKSHOP 2 SUMMARY

ATTENDENCE

Workshop 6 had representation from the Bay Area Regional GIS Council and the Central Coast Joint Data Committee. In all, 12 individuals and two Collaboratives were present for the workshop. Five individuals were from local government, 2 from state government, and 6 from private entities.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 6
Hayward, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Communication/Coordination • The public has some recognition of the value of mapping (in large part because of Google Maps etc.) • Given the challenging geography, it is a strength that the CA geospatial community has figured out how to organize themselves in some way. • A trifold has been developed for NSGIC that outlines achievements and current projects. • A central repository, CASIL, has been developed that makes data accessible.	• There is no state level coordinating authority. • No state data model • There is no clear communication regarding what the state wants from local governments. • Absence of ABAG representation at workshop.	• There needs to be a website to publicize geospatial information related to both CA and the region. • Identify the talking points related to business. GIS is the engine. • The Coastal Commission and the EPA had GIS Yellowpages. This is a list of people and contact information for who were working in CA in GIS. It would be great to have a map on a website where you could select an area and drill down to contacts, entities, and projects (hard to maintain).	• There is a new crop of web-based map display applications that set unrealistic expectations on the effort to develop and sustain data.
Data Sharing • There are a lot of different models of data sharing. • Caltrans has an internal geodetic dataset that people should be aware of.	• There are a broad array of agreements with a variety of legal terms of use. • No single authority responsible for the maintenance of data. • Currently no identified process or target location for the data. • Hesitation to share data given how data will be used and the data adequacy.	• There needs to be a central library of available datasets. It's hard for people to find datasets in their most current form. The Census Bureau data set lists and downloads is a good example. • There have been efforts to develop Coastal GIS for a long time. Experiences with the local governments have been diverse. Agreements to get the data have ranged from informal to paying nominal fees, to too expensive. There have been some issues with	• Any time you create a common data set that is shared through a public portal such as Google, there is a possibility that people will degrade the accuracy. There need to be rules of how this resource is maintained and who contributes. • Often times licensing agreements have been written in a way that targeted private entities. There are a lot of legal issues with informal data

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
		licensing agreements. • Share Caltrans internal geodetic control.	sharing. People don't always realize they need to go back to the data owner. • Things that aren't physical features are not good candidates for a common GIS data set. • Privacy concerns related to data sets.
Funding • NA	• It is hard to ask for regional funding if you haven't demonstrated why it's worthwhile. • Perception that GIS is expensive. Counter this with the reality that it is likely just 1/10th of any given improvement project.	• There is an opportunity to promote awareness for GIS. Currently, funders see it as something extra. There is a need to show business value, not just "flashy fly-throughs." You need to present more than the nice color. You need to present it in the right way so people know it's important. • GIS is used to help make better business decisions, not just pretty maps. • Homeland Security funding for orthos and cadastral data.	• There's no funding for regional efforts. This all falls on the local governments. Everybody needs the data but nobody can pay. • Large demand from the commercial sector for data and they are trying to externalize costs. • Communities are expected to spend time giving away data and teach others about it. • Funding is going to require a lobbying effort at a state level. There's a perception that lobbying is not a good activity for government employees.
Data Development • The skill sets in GIS have quadrupled in recent years. • Most counties have GIS and GIS applications or services on their websites.	• There is a need to identify authorative source and steward of each data set.	• Work towards the National Map; step out of county-only perspective. • Data sets should be "open source". • Formalize who stewards which data sets.	• There is no state standard to build upon.

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 6
Hayward, CA

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

Attendees noted that it is wrong to ask people to convert to a standard that is not appropriate to them. A better question is can the data be converted to a common statewide standard. Statewide metadata standards don't always address the needs at a local level so this has to be addressed as well. If the standards are not in conflict, then it is possible to roll them up. You really need a base level set of standards.

The question was asked by attendees, what do we mean by standards? It is better to use the term "data model." A standard does open a lot of other questions. This is an issue of semantics. There is a balance when you're talking about content standards.

The question was asked, are there processes or programs that you have to support that require aggregated data? Answers included:

- Coastal Trail datasets.
- Emergency services- flood and earthquake data.
- Regional land use planning, smart growth.
- National Hydrography Dataset
- Census (especially if there are undercount problems)
- Addressing
- Wetlands
- Water utilities surface areas (on the wish list).
- The Emergency Shelter Database Initiative.
- Rally around the National Map as an objective.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

The interface setup for discovering and obtaining Census data is a good model. The question is what happens on the back end.

For the information services people, pushing something out is more palatable than having someone read in because of security issues. Also, if you can push data up to the state, there might be more funding available.

Alternatively, getting data from the source could ensure the data is the "latest and greatest." There does need to be incentive to get local government to do this. The compromise might be aggregating data at the regional level.

Attendees expressed concern on the feasibility of aggregating data to a statewide view. Who is going to make the data look alike and how is it going to be manipulated. NCOne Map was discussed as a good example of a statewide data view. They have seamless access to local resources and the data is stitched together at the borders to make it look like a cohesive whole. An even bigger problem is the policy or mandate to create a statewide view.

The discussion issues were generally centered around policy, resources, and funds.

IMPLEMENTATION

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CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 6
Hayward, CA

1) State Support

- The State should provide money to support regional datasharing.

- The State should adopt a data model and provide guidance/leadership and technical direction to help create/sustain regional data.

- There should be a government authorized (legislated) council that has authority in the field with state agencies.

- It's important to note that there's a fine line between providing guidance and telling others how to conduct their business. A state sanctioned data model might do more harm than good if it's not managed correctly.

- The State should ensure that progress is made on geospatial initiatives. They should promote and facilitate collaboration.

- If there are State requirements, they need to specify and publicize them. Communities might match these requirements if they are given incentives.

- The state should act more like a traditional customer would when they need data.

- Evaluate land record transaction fees as applied in Oregon.

- It's important that the State keep funding going for the California national diversity database.

2) Governance

Without a GIO as a coordinating entity the responsibility falls to the regions. But regions do what they feel is best for the regions, not the state. The regions do not have a unified approach and sometimes do not have common priorities.

The state could create several grants that provide incentives for regions to take initiative.

Commentary around the CA GIS Council:

- CA GIS Council could provide forum to communicate (maybe wiki style).

- The Council should reach out to the development community and facilitate an interest in creating functional GIS data.

- The Council should have a mandate that's recognized in the state and gives them authority.

- Short of formal authority, the Council should have more involvement from decisionmakers in departments and agencies

- There is sometimes confusion around what the Council is coordinating. This needs to be addressed.

- The Council should continue the strategic planning process. How are the state agencies going to be involved?

- There needs to be more awareness about what the Council is doing and what it advocates. They should come up with a set of goals for what they're promoting.

- Instead of being datacentric, the Council needs to focus on what's in the public interest so there's a clear case for the benefits of GIS.

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- They should make it clear what their goals are and how people can help. What can people do to contribute?

- There's an opportunity for them to define what the desired future state of GIS is for the State of California.

Who would benefit from statewide data?

- There are small government entities that don't have funding for GIS staff. They would benefit from having access to any statewide data.

- Entities involved in regulatory programs would benefit from improved consistency of datasets.

- Local and regional stakeholders that aren't GIS enabled or experts. They would benefit from a simple mapping tool that supports advocacy and business decisions.

- Emergency services need to see what the data and resources are across the borders of cities, counties, and regions

- Computed Aided Dispatch needs to understand administrative boundaries so they can get information to the right response team.

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CALIFORNIA GIS STRATEGIC PLAN PHASE 2: REGIONAL PARTICIPATION

Regional Workshop #7:
Escondido, CA
November 15, 2007

Prepared for:

California GIS Council &
California Geographic Information Association

Prepared by:

Michael Baker Jr., Inc.

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Prepared on: **November 21, 2007**

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 7
Escondido, CA

I. PREWORKSHOP SURVEY RESULTS

A. San Diego Regional GIS Council (Workshop Representation)

1) Regional Organizational Capacity
- Technology is not meeting business needs in networking or data storage, but is suitable for data exchange, software or hardware capabilities.
- Funding is considered minimal. Cost sharing agreements are the only listed funding mechanism.
- There is no staff available to support GIS efforts. There are no minimal volunteers.
- Strong executive support is occasionally available.
- There is not a formal process for project oversight.
- There is a need to implement policies that would facilitate data sharing.

2) California Spatial Data Infrastructure
- The following datasets are available for this region:
    - Cadastral (no standards, 0.5-1.0 m horizontal accuracy, 1-3 mths old, from Various sources including the County Assessor and local jurisdictions)
    - Ortho imagery (no standards, >1 m horizontal accuracy, >1 year old, from Various sources)
    - Transportation (no standards, 0.5-1.0 m horizontal accuracy, <1 mth old, from various local and state agencies)
    - Elevation (no standards, >1 m horizontal accuracy, >1 yr old, from USGS, 1970s)
    - Hydrography (USGS NHD Standards, >1 m horizontal accuracy, >1 yr old, from USGS NHD)
    - Geodetic Control (no standards, <0.5 m horizontal accuracy, 1-3 mths old, from San Diego County and local agencies land surveys)
    - Governmental Units (no standards, >1 m horizontal accuracy, 4-12 mths old, from various sources including LAFCO and County Assessor tax rate areas)
    - Street Addressing (no standards, <1 mth old, from various local agencies and emergency response)
    - Flood Hazard (FEMA Standards, >1 m horizontal accuracy, >1 yr old, from FEMA and local agencies)
    - Vegetation (no standards, >1 m horizontal accuracy, >1 yr old, from various sources including photo interpretation)
    - Cultural and Demographic Statistics (no standards, >1 m horizontal accuracy, >1 yr old, from various sources including SANDAG and US Census)
    - Soils (NRCS Standards, >1 m horizontal accuracy, >1 yr old, from NRCS)
    - Wetlands (USFWS NWI Standards, >1 m horizontal accuracy, >1 yr old, from USFWS NWI)
    - Earth Cover (no standards, 0.5-1.0 m horizontal accuracy, 4-12 mths old, from various sources including SANDAG and local agencies)

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- The top 5 regional datasets this region would like to develop next are:
    - Ortho Imagery
    - Elevation
    - Utilities
    - Building and Facilities
    - Vegetation

3) Regional Implementation

- This region has used the California Spatial Library, and the California Environmental Information Catalog, but not the 50 States Initiative or Imagery for the Nation.
- The establishment of a GIO is viewed as important.
- This region sees the GIO fulfilling the following responsibilities:
    - Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
    - Coordinate and administer grants related to geospatial information and geographic information systems
    - Lobby for funds; stewardship/ promotion of GIS

- This region believes the GIO should be placed in the new office of the State's Chief Information Officer.

II. REGIONAL WORKSHOP 2 SUMMARY

ATTENDENCE

Workshop 7 had representation from the San Diego Regional GIS Council. In all, 19 individuals and one Collaborative were present for the workshop. Eleven individuals were from local government, 1 from state government, 1 from federal government, and 6 from private entities.

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 7
Escondido, CA

CURRENT SITUATION

1) SWOT Analysis

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Communication/Coordination • San Diego has a very open GIS community. • There are not a lot of regional jurisdictional issues because there is a regional Council of Government and Metropolitan Planning Organization that has taken an active role in using and promoting GIS. • There is collaboration across the region whenever they create standards. This is possible because there is an active GIS Council with representatives from both the public and private sectors. • There is a lot of communication and agreement about how tasks need to be prioritized. • There are good GIS educational programs at local colleges. • Early on (1980's) there were high level champions for GIS in San Diego County.	• There is no longer a high level/political champion for GIS. • While the Collaborative is very participatory, there is no political power. They come up with great standards, but the implementation process is difficult. • Historically, the regional agency acted as a leader, but more recently other agencies have taken more active roles. The region needs to reevaluate their role. • All of the GIS managers came through the technical side of GIS and aren't good at navigating policy issues.	• ESRI International User conference each year reinforces our common platform. • SANGIS is currently re-formulating itself.	• Empire building • Retirement is a threat. GIS has been in San Diego for 30 years and experienced people are leaving the work force
Data Sharing • There is a precedent of data sharing and common guidelines. They meet as a group and vet/approve standards. • There is an open portal for all data. • A long history of imagery sharing partnerships. This gives momentum	• There is not a regional data sharing agreement. Almost everything is done informally by the City of San Diego, the County of San Diego, and SANDAG. • Several counties near San Diego do	• There is a formal agreement between the city and the county that is able to be reengineered. • There is an open portal where people can get GIS information, unless it is data that specifically	• With consumer GIS there is increased internal agency pressure on the liability and the legality of information made available. • They are currently using

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
for additional data sharing opportunities. • Everyone is using the same platform (ESRI) and the same projections etc.	not share their data and some believe in charging for data.	can't be shared.	standards that have not been updated since they were created in 1988 and 1992. This is becoming an increasing problem.
Funding • A history of organizing to build and sustain regional data.	• There is a lack of funding and a lack of political support. It is a constant struggle to maintain a viable source of funding that is sustainable.	• Try to leverage GIS more to influence policy issues. Project managers with business focus need a mechanism to be educated on how they should leverage GIS. • There are regional initiatives relating to homeland security and the fire geodatabase that can be built upon to increase GIS funding. • There is a need to promote awareness of the value of GIS for decision making to elected officials. It needs to be demonstrated that they are meeting regional business needs with GIS. Build upon opportunities for GIS analysis and decision making such as the recent fires and promote GIS during those time so that there will be more backing during normal times. • Opportunity to use the ESRI conference to build publicity.	• SANGIS has lost funds because there are no longer paid subscribers given the impact of the CA Attorney General Opinion.
Data Development • There is already a lot of data that is current and readily available.	• A lot of the current GIS work is graphic-oriented and focuses on making maps. There isn't a lot of	• Evaluate data replication and data check-in and check-out. • Use the libraries inherent	• Data development has been a regional focus. Today many applications are being

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STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
	analysis being done for policy or business decisions.	capabilities to organize and archive GIS data.	developed without a focus. • New hires need programming and IT skills. It has proven difficult to retain personnel. • New users are good at creating applications but not as good at how to create good foundation data. • Some students are really good at one aspect of GIS, but it used to be one person that was very diverse. Now you have to combine the proper people to get what you had with one person. You also have to pay enough and provide upward mobility. • The rise of consumer GIS has changed the expectations of users within an agency. There are more requirements on the GIS department.

CALIFORNIA PHASE 2 STRATEGIC PLAN : REGIONAL WORKSHOP 7
Escondido, CA

REQUIREMENTS

1) Regional Discussion of Data Sharing and Standards

This collaborative is willing to follow standards as long as they can have input into what those standards are. They are in the process of creating standards and are gathering feedback first.

The problem with creating/changing standards is that there are a lot of old applications that expect data to be a certain way. Changing the data requires applications to change which requires funding. An ETL approach may be possible.

The City and County of San Diego are the 'guerrillas' and must adopt the standards or it is never going to happen. The key is to create a "minimum" standard. Participants didn't see why the city or county wouldn't be willing to adopt.

The question was asked, are there processes or programs that you have to support that require aggregated data? Answers included:

- FEMA floodplains
- Caltrans and functional road classifications
- National Hydrography Dataset
- Bureau of Land Management. (County parcel impacts on conservation parcels.)
- Tribal- boundaries, roads, parcels.
- Sensitive species habitat information provided to State Fish and Game Dept and US Fish and Wildlife Service
- Holland vegetation classification code map.

2) Regional Discussion of Federated Data Efforts and Incentives for Participation

With federated data there is a challenge with timing. Different datasets have different times that they were captured. There's also an issue with currency and having the most current data available.

If the regions collected the data from the communities, and the states collected the data from the regions, this would empower the GIS Councils. There could be regional servers that the state brings together. Practicality is a concern. Attribute matching is less of a concern than edge matching the data

San Diego Regional GIS Council is compiling data. They would need to be given the authority to store information and allow people to download it. San Diego GIS Council is one of the few entities that does daily updates of the parcel layers. Most other entities are quarterly or semiannually. Even San Diego GIS Council doesn't update all the parcels, just the areas of development.

The scheduling of data updates should be made public. The region needs to know when the state is going to update the data so they can get on the same schedule. What

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mechanism will be in place at the state level to ensure that updates are actually made? The region needs to know it's worthwhile to invest time and money.

It was noted that there is a lot value to historical data. Old data should be archived. The libraries are a logical place to organize and archive data. Attendees felt that historical snapshots need to be retained to understand change over time.

There is a lot of data that is available at some agencies but not at others. You can't consolidate at the state level if at the county level there are holes, because you can't get comprehensive consolidated coverage. You need to have a way to let the user know there's no known information built in certain areas and that it is not a data creation hole

The state will likely end up coordinating regional servers. There needs to be a way to coordinate the data and advertise to the public (make it similar to Google Earth). Some agencies might get excited about participating and filling in the data holes.

The question is still, how do you consolidate the data of different types. One entity may create vector polygons and another entity may use raster grids. As you change from region to region, the lines become polygons and the holes become squares.

There needs to be a legislative initiative that defines what is public and what's available to the public for free. The state needs to level the playing field because San Diego provides free data, but there our other counties that make you pay, and sometimes those fees are very large. There is also a security issue after 9/11.

IMPLEMENTATION

1) State Support

The state was encouraged to provide:

- Money
- Standards. If you're going to put together something for everybody to view, you have to have standards.

  It was noted that often, at the state level, they are not using the same standards across agencies or they are not using the same platform which hinders implementation. An example of pending common standard is that the State Fire Code is forcing a re-write at the regional level.

2) Governance

1. How might the California GIS community succeed absent a state coordinating entity like a GIO? Responses included:

- San Diego should continue working as a region and reach out to other surrounding regions. Attendees believed that sharing data across regions will be

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hard to do. There may not be any common regional applications, so the regions may not care.

- The state agencies are actually hurt more than the individual regions by the lack of consolidated state data. There was commentary about Google consolidated data and why the region could not follow this model.

- The entity of the GIO does not matter. Accomplishing the seven tasks identified in the survey are what matter. But to accomplish all seven might take a GIO.
  1. Provide leadership in the development and sharing of geospatial data
  2. Provide leadership in the development and sharing of geospatial web services and tool
  3. Provide leadership in the establishment of GIS technology and data standards
  4. Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems
  5. Coordinate appropriate use of GIS through outreach and networking of potential and expert users
  6. Facilitate training for skills related to use and development of geospatial information andg eographic information systems
  7. Coordinate and administer grants related to geospatial information and geographic information systems

- It comes back to having a champion. The comment was made, to have a GIO would be an accomplishment in and of itself, but it would not affect the way the region did business. Others disagreed and said it would affect the way they did business.

- In the absence of a GIO, there is no advocate that is specific to GIS. There is a need for someone to facilitate discussion. Someone needs to show politicians the benefits of GIS and "Walk softly but carry a big laptop."

Commentary around the CA GIS Council:

2. What do you need/want from the California GIS Council to further regional GIS efforts?

- The Council should become more visible. If you don't see them, you don't know them, and you don't care about them.

- The Council should hammer out agreements between the cities, counties, regions, and states.

3. What improvements can be made to the existing California GIS Council governance structure? What's working? What's not?

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- It has been set up such that the chair of each region can be a representative on the Council. In reality this does not happen. This needs to happen because the state needs to know what the needs of the regions are.

- Efforts need to be bottom up and not top down. It needs to be set up so the base is the region and it moves upwards. A lot of times efforts actually come down from the state, but they don't know the specifics about each region. They are making decisions completely blind about what's going on with GIS. It was asked why stop at the region. Why not go down to the local level. The answer was given: because at the regional level they have a Council.

- The GIS Council has had its measure of success only because of its relationship to CGIA and a handful of people on the Council. The model for the Council that is presented on paper is good, but isn't exactly what happens. The reality of participation is bad. Someone should address the structure of the Council and determine if the roles should be handled by different entities.

- The Council is a volunteer agency. They need funding to make things happen. CGIA can handle funds and has funding.

- It seems like it would make more sense to have a single entity instead of both the CGIA and the CA GIS Council.

4. What suggestions do you have for top priority strategies, goals and objectives for the California GIS Council that would help regional and local GIS efforts?

   Accomplishing the seven tasks identified in the survey are what matter. Add number 8 which is advocacy.

Baker

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CALIFORNIA GIS STRATEGIC PLAN PHASE 2:

APPENDIX C:
Post-Workshop Web Forum

CREATING A CALIFORNIA
SPATIAL DATA INFRASTRUCTURE

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CA SDI: Data Development- Street Addressing versus Parcels
Author	**Message**

Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **CA SDI: Data Development- Street Addressing versus Parcels** Workshop attendees observed that data development efforts should be focused on street addressing as opposed to parcel development. By emphasizing street address data, the region will be able to benefit from more readily available funding sources in areas such as emergency response and homeland security. • Do you agree with this statement? • Are there data set dependencies that CA should consider? For example, a workshop attendee promoted a focus on good geodetic control before developing the other prioritized data sets.
Sat Dec 08, 2007 4:55 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 There was a significant investment made in identifying the needs of the State (see "Draft Report on State Agency Needs for Digital Lands Records Information" on the GIS Council Web page). In my experience a significant percentage of GIS analysis comes down to "who owns it". If I was starting a program from scratch, I would take the parcels (unless my primary objective was dispatch or vehicle tracking). If the 58 counties had developed geodetic control before they developed parcel information then we would be in great shape. This did not happen. We should leave the development of the geodetic control in the hands of the surveying profession (but we can't wait for their contribution). I have seen GIS base mapping developed at 500 scale and used for many years and then enhanced to 100 scale to support applications that required improved accuracy. I think it helps to have something in place to improve. Until the data is compiled, you cannot even start to check for accuracy and completeness. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:37 pm	PROFILE PM
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CA SDI: Federated versus Central Data Models

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **CA SDI: Federated versus Central Data Models** We would like to further the discussion relating to federated and central data hosting models. • What are the benefits and challenges of each model? • Do you see one model as more feasible than the other? QUOTE
Sat Dec 08, 2007 5:03 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 QUOTE This question assumes some understanding of the technical and financial implications. I don't have a good grasp on either so I will try to simplify issue. The local governments are actively maintaining some of the core and supplemental datasets that will constitute the CA SDI. There is some notion that there is a regional demand for this data, and it seems that there is a need for state-wide coverage. The local data needs to be translated into a regional data model, and then the regional data sets combined into a statewide coverage. The state layer would be centralized (data compiled into statewide coverage) while the regional and local data would be federated. It seems we need both, not either or. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:37 pm	PROFILE PM

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CA SDI: Liability and Data Sharing

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	▯ **CA SDI: Liability and Data Sharing** QUOTE Workshop attendees observed that liability is one of the greatest limitations to data sharing. There is a concern that data created for one intended purpose and accuracy will be inappropriately used by another entity for purposes never intended. • Provide more specifics on these limitations and how this might be overcome.
Sat Dec 08, 2007 5:08 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	▯ QUOTE I was subpoenaed and had to give a deposition regarding the location of a GIS right of way line in respect to a culvert location in a personal injury case. I pointed to the disclaimer, and informed the attorneys that property delineation for ownership purposes is the venue of the Professional Land Surveyor. I think we need to educate ourselves to get over this fear. One approach would be if a local entity provides data that is compiled into a regional dataset, then the entity compiling the regional data could disclaim the entire data set and indemnify those that contributed data. In a sense the local providers would be 'one step removed'. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:36 pm	PROFILE PM

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Implementation: Communication and Support from the State	
Author	**Message**
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	☐ **Implementation: Communication and Support from the State** `QUOTE` Workshop attendees observed that it is the responsibility of the state to inform the counties/regions of specific state needs, and provide incentives for the counties/regions to ensure that these needs can be met. • Your feedback?
Sat Dec 08, 2007 5:17 pm	`PROFILE` `PM`
MattPrice Joined: 23 Jan 2007 Posts: 15	☐ `QUOTE` The State has not provided any direction for the regional councils to my knowledge. They encouraged formation of the regional councils, but then asked nothing specific from them. There is no definition of success for a regional council. I think that the analysis done surrounding funding is premature, as we do not seem to have a clear picture of what is expected of a regional council in terms of supporting the development and maintenance of the CA SDI. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:36 pm	`PROFILE` `PM`

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Implementation: Communication Across the State

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	◻ **Implementation: Communication Across the State** QUOTE Workshop attendees observed that a "Geospatial Yellowpages" could serve as a directory of geospatial professionals throughout the state of California. • Would this be beneficial? • How might this be maintained and updated?
Sat Dec 08, 2007 5:18 pm	PROFILE PM

MattPrice
 	
Joined: 23 Jan 2007
Posts: 15
	◻ QUOTE
	
	If we are focusing on the communication required to build the Ca SDI then there should be contact information for the State GIS council members on the web site of the GIS Council, and members of the various regional councils should have their contact info posted on the web as well (amend the charters to include this as a requirement?). This may be easer to maintain. Required contacts for framework data development:
	
	   GIO (statewide data integrator) -> Regional Council Contacts
	   Regional Council Contact -> Local Government Contacts
	
	If you can show that the 'yellow pages' will support the development of the CA SDI then it should be done.
	
	Matt Price
	GIS Manager
	County of Santa Cruz
	701 Ocean Street, Room 530
	Santa Cruz, CA. 95060
	(831) 454-3101

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Implementation: Roles of the GIO

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **Implementation: Roles of the GIO** QUOTE A pre-Workshop survey question asked what roles and responsibilities should a state GIO, or the GIO Office, have. Seven pre-set responses were available: 1. Provide leadership in the development and sharing of geospatial data 2. Provide leadership in the development and sharing of geospatial web services and tools 3. Provide leadership in the establishment of GIS technology and data standards 4. Promote best practices for methods and procedures related to the use and development of geospatial data and geographic information systems 5. Coordinate appropriate use of GIS through outreach and networking of potential and expert users 6. Facilitate training for skills related to use and development of geospatial information and geographic information systems 7. Coordinate and administer grants related to geospatial information and geographic information systems • What other roles and responsibilities do you see the GIO or the GIO Office fulfilling?
Sat Dec 08, 2007 5:21 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 QUOTE The GIO should be focused on two major functions. Coordinating GIS within and between State departments and the coordination of local and regional government to achieve State goals (each of these activities could consume one PY or more). I think the GIO needs to address a core problem with the structure of the GIS Council. There is a confusion of issues and the representation is too broad. There does not seem to be an effective use of sub-committees. For example, a Sub-committee to the council should be formed with representation from each of the regional councils. There needs to be some separation of issues to help get some focus. I don't think the frequency of the meetings is enough to meet the challenges we face. Maybe the full council would meet every six months with the sub-committees meeting monthly. The State is looking for a Deputy CIO. This position should be the GIO. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101

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Implementation: Educating the Public	
Author	**Message**
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **Implementation: Educating the Public** Workshop attendees observed that it is vitally important to educate the public and elected officials of the benefits of GIS. Workshop attendees feel that there is still a large community who think of GIS as a tool to create pretty maps and maybe provide fly-throughs. Attendees supported the idea of promoting the business use and value of GIS to make business decisions. • Do you agree with this statement? How might this effectively be accomplished?
Sat Dec 08, 2007 5:22 pm	
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 I think Google Earth has educated the public more than we as a group ever will. We need a rallying point (a message) if we want broad based support to build the CA SDI. The USGS National Map could be a rallying point. You can explain the message with three sentences: "The USGS is no longer maintaining the USGS 7.5 Minute Quad mapping, and local government maintains a good portion of the spatial data contained on the quad maps in GIS format to support local government business activities. The USGS needs the GIS data from local and regional government to support the USGS National Map which is replacing the Quad maps. The National Map will serve as the basemap for most mapping activities" Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:34 pm	
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Implementation: Sustainable Funding	
Author	**Message**
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **Implementation: Sustainable Funding** Every Regional Collaborative represented at the Workshops were concerned with the lack of sustainable funding. • How might this be overcome? • What resources are available? • How might the state assist the regions in leveraging federal funds?
Sat Dec 08, 2007 5:32 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 The State won't pay to help develop regional data but they will buy statewide data from vendors (thanks for the support)? The reason this is happening in California is the public sector GIS profession have grossly underachieved in the development of the NSDI a.k.a. CA SDI (other than the NHD and imagery). The State developed the concept and charter plans for the regional councils as a means to mine local data. The State has now reverted to purchasing statewide data from private vendors (street centerlines) and thus is starting us on the path to privatization of framework data development and maintenance. Baker and AT&T have developed a statewide parcel layer and the maintenance processes to keep it current (duplication of effort, in stark contrast with the vision of the NSDI). When I saw the Baker/AT&T presentation at CALGIS I was disappointed in the GIS profession in the public sector for failing to provide this data and service, compounded by this same group being oblivious to the implications of private entities encroaching on our core business as it relates to framework data development (government is failing to leverage data created locally, and the private sector is stepping in to fill the void). How might the State assist in securing private sector funds or even its own money and resources to help leverage the data developed at the local level to help avoid duplication of effort and build the CA SDI? Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
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Implementation: Business Drivers and Funding	
Author	**Message**
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	⬜ **Implementation: Business Drivers and Funding** QUOTE Workshop attendees observed that fires, pesticides, social services, and West Nile virus were all business drivers that could be used to facilitate GIS funding. • Are there any additional "high priority" topics that might create opportunities for GIS funding? • What actions by the regional collaborative must to be taken to promote GIS funding through these areas?
Sat Dec 08, 2007 5:34 pm PROFILE PM	
MattPrice Joined: 23 Jan 2007 Posts: 15	⬜ QUOTE If we are referring to funding for regional data development of core and supplemental framework CA SDI data and compilation of this data into a statewide layer, then we still need to identify the costs associated with this activity. What is the cost to compile local data into regional data, and then regional data into a statewide coverage? Once we know this on a layer by layer basis then we can get a better handle of how to get the money. We should start developing estimated costs for each layer. I think that GIS funding in general is a challenge that every local entity faces, but the State is not fully leveraging what has been invested in data at the local level. One of the goals of the NSDI is to reduce duplication of effort. We are all failing to achieve this goal. How many street layers for any given area are out there now? How many parcel layers (at least two, the counties' and AT&Ts')? At one point my own parcel was being mapped three times, once by the City, once by the County GIS, and once by the County Assessor's office and none of this was available to the State or private sector in digital form. Is this good government? Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:33 pm PROFILE PM	

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Org. Capacity: Staffing-Technology and Policy Experience

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **Org. Capacity: Staffing-Technology and Policy Experience** QUOTE Workshop attendees observed that many individuals in GIS management positions come from a technology background and have less experience working with public policy. • Do you feel that a strong background in public policy would be beneficial to individuals involved in GIS management? • What additional skills might you find useful for such a role?
Sat Dec 08, 2007 5:59 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 QUOTE GIS Managers come from a variety of backgrounds. This reflects the relative newness of the positions in many organizations and the diversity of functions that GIS Managers serve. What types of public policy are we struggling with? It seems that data sharing is the major policy issue as it relates to building the CA SDI. If you plan to change policy, you need to have a simple consistent message that you repeat and promote at every opportunity. I think that local GIS program managers across the state would benefit from a GIS Council that actively endorsed policy (the message). For example, it would be great if a letter was sent to all of the Executive Officers and Boards in California Counties from CGIA and the GIS Council that endorsed the recent Attorney General's position. The letter should include a list all of the counties that have complied and identify the benefits to specific state programs. I know a letter like this was sent in March of 2006 by the Open Data Consortium, but it was not directed to the policy makers. With respect to getting policy changed or implemented, we need to identify the barriers to success, and remove them. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:32 pm	PROFILE PM

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Org. Capacity: Staffing- New Hire Experience

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	🗋 **Org. Capacity: Staffing- New Hire Experience** QUOTE Workshop attendees observed that the skills of new hires have changed in recent years. New employees usually have more specialized skills, as opposed to the broad interests more common in the past. • Can these focused/ specialized niche skills negatively impact the overall creation and maintenance of core data sets? • What are the benefits and drawbacks to the changing trends and how might these be addressed?
Sat Dec 08, 2007 6:01 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	🗋 QUOTE This seems to be somewhat of a generalization. The number of educational programs with GIS components has increased and improved over the last decade. Fifteen years ago you could have one person who 'knew' GIS (look at the difference between the 1995 ESRI system design strategy document and today's). GIS is now a team sport. It is probably not the skill sets of the new hires, but the skill sets of the old guard that need some attention. Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101
Sat Jan 05, 2008 10:31 pm	PROFILE PM

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CA SDI: Universities as Data Hosts

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	▯ **CA SDI: Universities as Data Hosts** QUOTE Workshop attendees observed that libraries and universities could serve as potential hosts for regional data. They frequently have the infrastructure, staff, and student volunteers necessary for keeping a regional data repository operational. It was also suggested libraries/universities could capture historical snapshots of data to observe change over time. • Is this a realistic possibility? • If so, how might this be realized?
Mon Dec 10, 2007 10:20 pm	PROFILE PM
MattPrice Joined: 23 Jan 2007 Posts: 15	▯ QUOTE The Universities are a great support to regional GIS data development efforts and a great place to archive historical data. It seems that given the variation of resources with respect to the regional councils in some cases the Universities may be the only option. There will likely be a mix of hosts, Universities, Local Government, Regional Government, and possibly the State. Ideally, hosting regional data would be done either by regional government (ABAG, AMBAG, COGs), or the State, with clearly identified responsibilities and dedicated funding. The State has several departments that are 'heavy' users of GIS (DFG, CALTRANS, CalFire, OES, Parks…) and these entities are already broken into regions of their own, so the funding could be incorporated into one or more of these department's budgets to support aggregation of regional data. While this activity may seem outside of the scope of the State agencies, it wasn't long ago that GIS data development and maintenance was outside of the scope of the local agencies. I think what needs to happen is an inventory of GIS program funding for all State agencies to determine if there are existing resources that could be re-directed to help achieve the CA SDI. How much does the State pay each year to support its GIS operations? How many GIS positions are there? How much local data has been collected and compiled already? We still need to identify the existing and potential customers of regional data. I think we have done a poor job of doing this. The State and federal government would be the #1 beneficiary of regional data compilation, but who else could gain? PG&E? AT&T? Comcast? Matt Price GIS Manager County of Santa Cruz 701 Ocean Street, Room 530 Santa Cruz, CA. 95060 (831) 454-3101

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CA SDI- Data Availability Snapshot

Author	Message
Itighe Joined: 30 Nov 2007 Posts: 13 Location: GIS Council - Baker	**CA SDI- Data Availability Snapshot** A table (found at http://www.cgia.org/DataAvailabilitySnapshot.pdf) summarizes the responses provided by each regional collaborative through the September pre-Workshop Survey regarding regional data availability. Please provide any updates or feedback regarding the regional datasets listed below. We are specifically asking about data that is: • created by the region, • compiled from local sources, • public domain source data that has been significantly edited/updated/enhanced by the region, • or data that is licensed by the region from a commercial source. Descriptions of each data theme can be found here. **7 Core Data Themes** 1. Cadastral (not including data from the Bureau of Land Management) 2. Ortho Imagery (not including NAIP) 3. Transportation 4. Elevation (not including NDEP or USGS data) 5. Hydrography (not including 1:24000 NHD) 6. Geodetic Control (not including the National Spatial Reference System) 7. Governmental Units (not including Tiger data) **11 California Centric Themes** 1. Street Addressing (not including Tiger data) 2. Utilities 3. Public Land Conveyance Records (not including data from the Bureau of Land Management) 4. Building and Facilities 5. Flood Hazards (not including FEMA DFIRM data) 6. Vegetation (not including data from the Fire and Resource Assessment Program) 7. Biological Resources (not including data from the California Natural Diversity Database) 8. Cultural and Demographic Statistics (not including Census data) 9. Soils (not including data from the State Soil Geography (STATSGO) Database or the Soil Survey Geographic (SSURGO) Database) 10. Wetlands 11. Earth Cover
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