



# GEOGRAPHIC INFORMATION SYSTEMS STRATEGIC PLAN: MAPPING WASHINGTON'S FUTURE, 2010-2014

## APPENDIX B Stakeholder Outreach: Synthesis of Findings

Final: March 25, 2010

**GEOGRAPHIC INFORMATION SYSTEMS STRATEGIC PLAN: MAPPING WASHINGTON'S FUTURE, 2010-2014** was adopted by the **Information Services Board Geographic Information Technology Committee (ISB-GIT)** on March 25, 2010

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*"Helping Communities and Organizations Create Their Best Futures"*

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**GEOGRAPHIC INFORMATION SYSTEMS STRATEGIC PLAN**  
***MAPPING WASHINGTON’S FUTURE, 2010-2014***

**Stakeholder Outreach: Synthesis of Findings**

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# GEOGRAPHIC INFORMATION SYSTEMS STRATEGIC PLAN

## *MAPPING WASHINGTON'S FUTURE, 2010-2014*

### Stakeholder Outreach: Synthesis of Findings

#### 1.0 SUMMARY OF STAKEHOLDER OUTREACH

##### 1.1 Introduction

Washington's updated Geographic Systems Strategic Plan, *MAPPING WASHINGTON'S FUTURE, 2010-2014*, is based on extensive input from the statewide GIS community, reflects current business needs in Washington, and supports the National Spatial Data Infrastructure (NSDI).

##### Stakeholder Outreach Process

An important part of the planning process is effective outreach to stakeholders across the state, which includes asking for input to shape the Strategic Plan, and building understanding, buy-in, and support for the final adopted Plan. Effort has been made to collect input from representatives from diverse regions and organizations across the state. This effort has included multiple ways to solicit input from stakeholders, including a WAGIC executive committee focus group meeting; a discussion with the project's sponsor, Information Services Board Geographic Information Technology Committee (ISB-GIT); regional listening sessions for GIS users; and an online survey.

**Listening Sessions.** There were four regional listening sessions held around the state in Everett, Olympia, Spokane, and Tri-Cities in October and November 2009. The originally planned fifth listening session in Ellensburg was cancelled due to the low number of participants. In total, there were 85 attendees representing 58 different organizations, including:

- 15 county entities
- 10 state agencies
- 10 city entities
- 9 private companies
- 5 higher education agencies
- 3 tribes
- 3 federal agencies
- 3 regional agencies

**Survey.** An online survey was available for GIS users who were unable to attend one of the regional listening sessions. The survey addressed the same topics discussed in the listening sessions and was available from October 5, 2009 to November 20, 2009. In total, there were 59 survey respondents, representing a variety of organizations. An exact count for specific organizations is not available from the survey, but the numbers of respondents for each type of organization are as follows:

- 27 respondents from state agencies
- 13 respondents from county entities
- 6 respondents from federal agencies
- 4 respondents from city entities
- 3 respondents regional organizations
- 1 respondent from a tribe
- 1 respondent from a utility agency
- 1 respondent from an engineering firm
- 1 respondent from an oil/energy/gas firm

## 1.2 Themes from Stakeholder Outreach

The following is the high level summary of the major themes expressed by the WAGIC executive committee, ISB-GIT, four statewide listening sessions, and via an online survey.

### Full-time State Geographic Information Officer

There is a need for a full time Geographic Information Officer (GIO) that would represent the state GIS program office. Several potential roles were identified for a GIS program office, including: representing a single voice for the GIS community; providing statewide and regional coordination; coordinating statewide data access; providing limited stewardship of high-use datasets; establishing data standards; organizing educational events/materials/media for both GIS users and laymen, addressing best practices and current technology; and working on leveling the playing field by providing assistance and resources to those in need. The Office would also serve as a GIS advocate and provide education about GIS to decision-makers. The following are additional themes expressed by stakeholders regarding GIO office:

- The GIO office should have statutory authority and steady dedicated funding.
- The GIO office should be separate from the Department of Information Services and WAGIC, but there was no consensus on where it should be housed.
- GIO office should have the following staff requirements:
  - The staff should have practical experience and vision for better GIS in the state;
  - GIO position should not be a political appointee; and
  - Need to establish regional coordinators, which should be paid positions out of GIO office.

### One-Stop Data Access

There is a need for a central web-based data access statewide (data from multiple entities, including state, cities, counties, federal, tribes, and private). The stakeholders' opinions differed on whether this should be a data clearinghouse/web portal (that would provide links to available data) or central data repository. In either case, it should be easy to use, well-organized, searchable, and updated in set increments of time. Benefits would include easy data finding and sharing; reduction in data redundancy; and increased opportunities for inter-governmental collaboration.

In discussing the creation of a one-stop data access point, the following needs were identified.

- Data standards: need to establish data standards to facilitate data compatibility and ensure data quality and the documentation (metadata).
- Updates: need to establish a regular method to provide data to the clearinghouse; regional coordinators could coordinate data acquisition and updates.
- Data: the repository should include current data and archived files and be exportable in non-proprietary, easy to use formats.
- "Inside Idaho" was cited as an example.

### Data Standards

Stakeholders identified a number of issues and challenges surrounding GIS data statewide: difficulty determining data quality and accuracy; lack of consistent metadata and documentation; lack of commonly used "official" versions of data that are shared and updated on a regular basis; and redundant data.

Suggestions included establishing state (or adopting national) data standards for all GIS base data (i.e. roads, hydrographic, parcels, traffic incident data, etc) to facilitate easy data sharing. Uniformity of data would especially be important if a central data repository is created. Some suggested using financial incentives via the GIO office to ensure that entities meet established standards.

### **GIS Advocacy and Education**

Stakeholders expressed that many decision-makers are unaware of modern spatial technologies, including capabilities, value, and costs. There is a need for educating decision-makers, management, and the public about GIS capabilities, complexities, and the need for more resources.

Suggestions included tasking the GIO office with GIS advocacy and education. As a champion for GIS in the state, the GIO could create educational resources/communication materials to be available for use by all; publish best practices, success stories, and coordination opportunities; hold seminars and training sessions for the decision-makers (administrators, commissioners, council, legislators, etc.); advocate recognition of GIS by IT leadership; work with local user groups & state chapters of URISA, ASPRS, and others; and hold regional GIS forums where people demonstrate how they use GIS.

Many stakeholders noted that advocacy alone is not enough; there is a need to make business case for GIS technology by calculating and demonstrating return on investment (ROI) of different GIS investments.

### **Enhance Coordination**

Stakeholders cited a number of challenges related to coordinating data and services within their organizations and between organizations in the state. Suggestions included the following:

- Engage in more private (including non-profit)-public partnerships, as there are many businesses (i.e. utilities, water districts, telecom, cable networks, etc.) that maintain GIS datasets.
- Focus on regional coordination. WAGIC should create regional forums, not just one statewide forum. If GIO office is created, establish regional coordinator positions.
- Create a statewide web discussion board, which would feature GIS news and statewide training opportunities, and where members could post questions.
- Explore new methods of outreach and social networking tools (twitter/facebook/blogs/rss feeds) to keep in touch with GIS users.
- Create web-based code and tool exchanges among GIS developers and technicians.
- Help ensure cost sharing for those that have made initial investments.

## SPECIFIC SUMMARIES

### 2.0 WAGIC FOCUS GROUP (AUGUST 27, 2009)

BERK held a focus group meeting with WAGIC executive committee members to elicit the group's perspectives on what has been accomplished since the last Strategic Plan was completed, and the current needs, challenges and opportunities for the state's GIS strategy.

#### Progress on 2005 Strategic Plan

*Objective 1a.* Progress made on GIT – developed conceptual enterprise architecture.

*Objective 1b.*

- Have not completed modifying the organization's structure.
- Still need to modify WAGIC charter.

*Objective 2a.* Progress made on the following:

- Identified interim data stewards;
- Tracking framework projects – dashboard;
- Began work on orthophoto layer;
- Work on transportation.

*Objective 2b.* Progress made with National Spatial Data Inventory (NSDI) clearinghouse; UW – ongoing.

*Objective 2c/d.* Have not developed additional standards.

*Objective 3a.* Held planning session in Ellensburg.

- Need to make more progress (limited participation in WAGIC from local jurisdictions).

*Objective 3b.* Have not modified the organization's structure.

*Objective 3c.* No consistent coordination with USGS.

#### Potential Focus Areas for 2009/10 Strategic Plan

The group was asked to brainstorm potential focus areas for the Strategic Plan and assign priority to each of these areas. Prioritized focus areas are as follows:

1. Data and acquisition of data [4 stars]
2. Shared services to provide data and services [4 stars]
3. Governance to ensure smooth operations [number of stars missing]
4. Shared infrastructure (hardware, software, hosting) [3 stars]
5. Program Office (people) –could be part of #4 [2 stars]
6. Education around GIS [2 stars]:
  - Education outreach
  - Show off accomplishments
7. How to prioritize issue areas (collaboration around priorities)
8. Data accessibility

## Strengths, Opportunities, and Challenges Assessment

### Strengths

- The state is taking a coordinating role in big projects (data acquisition).
- There is good support for information and ideas in GIS community.
- Most agencies share common technology (ESRI software).
- Currently, there is a collaborative environment between ESRI, agencies, and other entities.
- There is executive support for GIT.
- Everyone is current on technology.
- GIT in the state is well established, there is a lot of expertise.
- The state is organized to accomplish large projects.
- The meetings on GIS services are well-attended.
- It's good to have people from ISB-GIT involved in GIS issues.
- There is a common understanding of technology and shared vision.
- Good standards have been established.
- There is a mechanism to take standards forward (this is also an opportunity).

### Opportunities

- Technical people should participate in ISB-GIT.
- Expand on shared infrastructure.
- Move to shared services provided through GIS technology.
- Get more federal money for other types of GIS data.
- Joy Paulus is a good GIS coordinator; there is an opportunity to have this recognized at the executive level and get more funding.
- Define the value of WAGIC and increase involvement and attendance.
- Pull together to accomplish goals and objectives.
- Show off successes better (this is a current weakness). There is a need to market the work that's been done (e.g. ortho portal, hydro project).
- Look at other arenas (revenue, legislative) and combine into state statistics (dashboards):
  - One-stop shop;
  - Government transparency;
  - Bring perspectives from business sides.
- Partner with URISA?

## Challenges

- Tight budgets in the time of economic crisis.
- It takes a lot of time (i.e. budget) to collaborate and participate.
- It is difficult to identify who the beneficiaries are (there is a disconnect between contributors and beneficiaries); need to get people who benefit to pay for it.
- Priorities of Government (POG) doesn't work for partnering between agencies (e.g. hydro project had support from three agencies, but it didn't take off because the agencies' own priorities come first).
- We lack a central coordinating agency.
- There are constraints in promoting accomplishments—can WAGIC be an advocate for GIS? Not unless WAGIC is non-profit and not within the state government (this is difficult in terms of advocacy, getting private funding, etc).

## 3.0 ISB-GIT MEETING (SEPTEMBER 11, 2009)

BERK attended a meeting with the Geographic Information Technology (GIT) Committee from the Information Services Board (ISB) to discuss the GIS strategic and business planning initiative. The following are key themes that emerged from the meeting.

### Use existing resources more effectively

- Make better use of the assets we have/make what we have work.
- Keep basic data layers accessible and current.
- Need to meet statutory requirements and obligations.
- Consolidate how we handle actions: data layers, governance, funding.

### Identify opportunities and ways to deliver service

- Build shared data layers.
- Need to look at sharing resources across agencies – more have data
- Address the “early adopter penalty” – help ensure cost sharing for those that have made initial investments.

### Communicate the GIS asset base that is in place

- Regarding hydro: there is a lack of appreciation about base data.

### Connect to current state initiatives and efforts, develop partnerships

- Shared services initiatives.
- PTI recommendations.
- Connect to other conversations within the agencies.

### Obtain support of the Executive, Legislature, and broader group of stakeholders

- The real power is the multi-level governments – help us understand the bigger picture.
- Identify and communicate what is possible without constraints.
- How can we best serve the public, and various stakeholder groups? We need to get input.

### Develop the Business Plan to tie to statewide goals

- Current plan lacks a priority focus; we should choose one to three priority targets.

## 4.0 REGIONAL LISTENING SESSIONS

### 4.1 Overview and Purpose

The regional listening sessions were designed to collect input on challenges and opportunities in the GIS user community that may be addressed by the statewide GIS plans. The ideas generated through this process will directly inform the shape and goals of the upcoming Strategic and Business Plans. The listening sessions also provided an opportunity to enhance the network of communication and collaboration among WAGIC, different jurisdictions, GIS practitioners, and the Information Services Board's Geographic Information Technology Committee.

### 4.2 Meeting Format

The listening sessions were structured to allow for maximum input and discussion. A brief introduction to the project was provided by Joy Paulus and Berk & Associates. Then participants were split into discussion groups of no more than six people. Each individual received a discussion guide with five questions regarding GIS use and the state's role in GIS coordination (**Appendix B**). Each group was asked to record the discussion and select the four to six most important points to report out to the larger group. Once each group had been given the opportunity to report out, a large discussion was conducted about emerging themes and overlapping ideas. The summaries below capture the themes and ideas generated at each listening session.

### 4.3 Meeting Summaries

#### Olympia Regional Listening Session (October 22, 2009)

##### Focus on Education

- Need to educate decision-makers on value of GIS, as well as effort and cost of GIS technology.
- Need a champion for GIS to educate legislators, local officials, and other decision-makers.

##### Establish a GI Office

- Establish a GIS Program Office and appoint a Geographic Information Officer (GIO), whose duties would include "selling" GIS to decision-makers.
- WAGIC is currently too technically-oriented to serve as a place host the GIO.
- Need governance structure to support GIO office.
- Need steady funding and statutory authority.

##### Shared Services

- Need a one-stop data access (centrally located on the web) for base data and GIS services offered.
- Focus on base data to avoid duplication (framework layers); need authoritative stewards for all data layers.
- Need inventory of who has what data, and how often it is being updated.

- To make shared services work, there will need to be:
  - User agreements,
  - Written guidelines,
  - Understanding of data restrictions, and
  - Governance structure.
- Some elements could be coordinated by the private sector.

#### ***Opportunities and Benefits***

- Elimination of redundancies will reduce costs.
- Shared services will increase efficiencies.
- Increased opportunities for inter-governmental collaboration through truly authoritative data (this would constitute a paradigm shift).

#### ***Challenges***

- There is a need to level the playing field for all entities involved (including local and tribal governments) to ensure consistent data.
- There is a challenge in determining whether or not applications meet the performance requirements of users.

#### **Develop Collaborative Relationships**

- Establish relationships between all levels: state, local governments, tribes, federal government, and others.
- Need ways to motivate participants.

#### **Everett Regional Listening Session (October 27, 2009)**

##### **Establish GIS governance to lead statewide coordination**

- Need to establish a GIO.
- Counties/cities should push representatives at the state level.
- Any requirements should be a funded mandate via state legislation.
- State role should be to facilitate GIS data and services integration.
- There needs to be an enterprise approach at all levels of government.
- We need to keep up with trends.

##### **Establish GIS data clearinghouse (i.e. portal, directory)**

- The clearinghouse should be web-based (potentially OGC) and searchable.
- Data clearinghouse will help decrease data redundancy.
- Need to establish data standards to facilitate sharable data (increase data compatibility).
- Need to establish a regular method to provide data to the clearinghouse.

- Data clearinghouse can later evolve into central data repository.
- Need to identify data stewards that could later help with data repository.
- Should it have geoprocessing capabilities?

#### **Continue to work with framework layers**

- There needs to be consistency with data involved and updates.
- Current information should be audited to ensure latest updates are included.
- Discuss and establish data upkeep/maintenance.
- Need to create a feedback loop from/to local data sources; this will ensure data quality.

#### **Focus on GIS education**

- Advocacy: educate decision-makers and public about GIS; focus on its capabilities, business needs, and value of GIS.
- The state should provide information about open source software.
- Focus on new students and continuing education of professionals.
  - Seminars should be available for working people (evenings, weekends).
  - Educating new generation should be the focus.
  - Create coordinated trainings across jurisdictions.
  - Record and provide placement stats of GIS graduates (# of jobs).
  - Present alternatives to ESRI software.

#### **Need for Shared Infrastructure**

- Through web services?
- Support resource deficient entities?

#### **Focus on funding**

- Engage in more private (including non-profits)-public partnerships; e.g. San Juan County has good coordination of data from non-profits to the county
- Apply for federal grants (FEMA, NOAA, stimulus, others); should the state coordinate?

### **Spokane Regional Listening Session (November 4, 2009)**

#### **Establish regional GIS support**

- Establish regional GIS resource centers (some counties/tribes already function this way); universities can help with this.
- Need to establish statewide enterprise ESRI agreement for all entities.
- Need to provide web services.
- Provide centralized servers for smaller/rural areas.

### **Establish GIS data clearinghouse (i.e. portal, directory)**

- This portal should contain data from multiple entities (state/city/county, federal, etc.).
- This should be a one-stop data shop, similar to “Inside Idaho.”
- The portal needs to have value to participants (identify business driver).
- The portal will reduce data redundancies.

### **Establish best practices/standards**

- Standards are needed for data uniformity across multiple entities.
- Need to establish timelines for data updates.
- Could potentially use financial incentives to ensure that jurisdictions meet established standards.

### **Create a GI office**

- GI office should maintain the data portal.
- GI office should provide education about GIS to decision-makers and serve as a GIS advocate.
  - Calculate and show ROI of GIS investments.
  - Show potential and actual savings.
- The office should be separate from DIS, but where should it sit?
  - OFM?
  - Governor’s Office?
- GI office should represent a single voice for the GIS community.
- Another role of GIO is to try to level the playing field: provide resources to those who need it.
- Provide regional support.

### **Enhance coordination**

- WAGIC should create regional forums, not just one statewide forum.
- It would be good to create a statewide web discussion board, which would feature GIS news and statewide training opportunities, and where members could post questions.
- Engage in public-private partnerships (in terms of data, other) and partnerships with federal entities.
- Expand GIS services to growth areas that underutilize GIS capabilities (health care, etc.).

## Tri-Cities Regional Listening Session (November 5, 2009)

### Create a GI office

- The GI office should set the data standards:
  - Support GPS Washington State Reference Network
  - PLS backbone
- The standards should be mandated and funded through legislation.
- The office should also set data retention policies.
- GI office should provide statewide and regional coordination.
- The office should be the keeper of all points of contact.
- GI office should have the following staff requirements:
  - Practical experience, with a vision for better GIS in the state;
  - Should not be a political appointee;
  - Someone with business case for GIS; and
  - Should be a champion for GIS.

### Create a regional web portal

- Focus on regional coordination. Establish regional coordinators, which need to be paid positions (out of GIO office). Regional coordinators would provide inputs to state level portal.
- Supported by WAGIC?

### Focus on education and outreach

- Educate both decision-makers and the public about the value of GIS:
  - Focus on marketing GIS: educate decision-makers and
  - Educate elected officials when new in office.
- Create resources/communication materials to be available for use by all to educate others
- Calculate ROI and use to demonstrate GIS value
- Engage and educate land surveyors
- Outreach to private sector: public-private partnerships (Vista consortium, NAIOP)

### Establish GIS data clearinghouse (i.e. portal, directory)

- The repository should be a one-stop shop for Washington GIS data
- The data should be hosted on one server for easy sharing
- The repository should include current data, archived files, framework data
- Regional coordinators (paid positions) should coordinate data acquisition and updates

### WAGIC's Role

- WAGIC should be involved in executive outreach.
- Should provide annual half-day regional sessions.

## 5.0 ONLINE SURVEY

### 5.1 Overview of Survey

**Purpose.** The survey was designed to allow GIS users across the state to provide input on the issues, challenges, and opportunities around GIS in their organizations and statewide. Users who were not able to attend one of the regional listening sessions were encouraged to fill out the online survey to ensure that a broad range of voices was heard during the outreach process. The survey was meant to help WAGIC determine who uses GIS, what GIS is most commonly used for, what the most common challenges to GIS use are, and what types of opportunities exist for GIS services.

The survey was available online at <http://wagic.wa.gov/2009GISPlanning/Survey.htm> from October 5, 2009 to November 20, 2009. The survey questions are available in **Attachment E**.

**Publicity.** To advertise the survey, WAGIC distributed notices to its listserv. A link was also available on the listening session flyer, which was distributed to the WAGIC listserv and posted in public areas. Besides WAGIC listserv, the notices went out to the following user groups:

- FMG (Framework Management Group)
  - WaTrans (Washington State Transportation Framework)
  - HFP (Hydrography Framework Project)
  - PWG (Parcels Working Group)
- ACCIS (Association of County & City Information Systems)
- AWC (Association of Washington Cities)
- LSAW (Land Surveyors' Association of Washington)
- NSGIC (National States GIS Council)
- NWESRI (Northwest ESRI Users' Group)
- PNWHF (Pacific Northwest Hydro Framework Working Group)
- SWIMTAC (Salmon & Watershed Information Management Technical Advisory Committee)
- WAURISA (Washington Urban & Regional Information System Association)
- WSAC (Washington State Association of Counties)

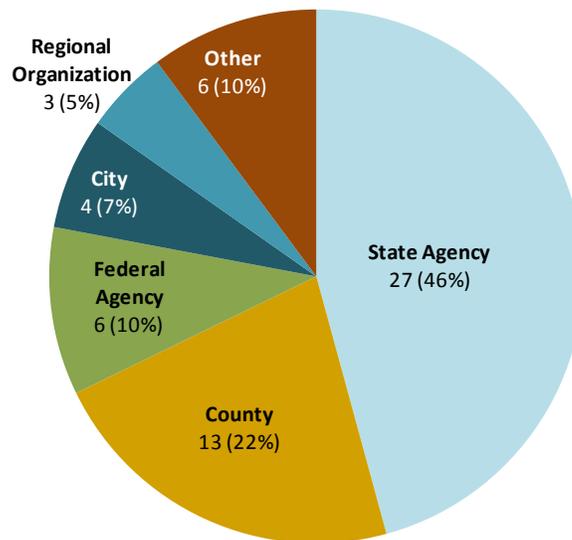
## 5.2 About the Survey Respondents

Please note that all percentages are calculated based on the number of respondents to each individual question. Response rates for each question are reported.

There were 59 responses to the online survey. Of the 59 respondents, 44 completed the entire survey.

Respondents were asked to specify the type of organization they represent. Exhibit 1 shows the responses broken down by organization type for all 59 individuals who responded to the question. The “Other” category includes tribes, utility districts, engineering firms, and oil/mineral/gas companies.

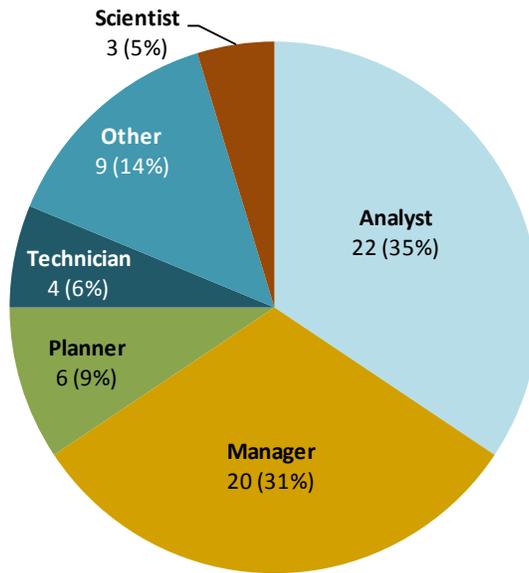
**Exhibit 1: Responses by Organization Type (59 Respondents)**



- The majority of respondents (46%) identified their organizations as state agencies. These include the Department of Natural Resources, Department of Transportation, Department of Ecology, Department of Emergency Management, Office of Financial Management, The Military Department, the Legislative Service Center, the Washington State Patrol, and others.

Exhibit 2 below shows respondents by type of GIS user. There are a total of 64 responses, as some respondents chose two types of users to describe themselves, indicating that they serve multiple functions within the organizations.

**Exhibit 2: Responses by Type of GIS User (64 Responses)**

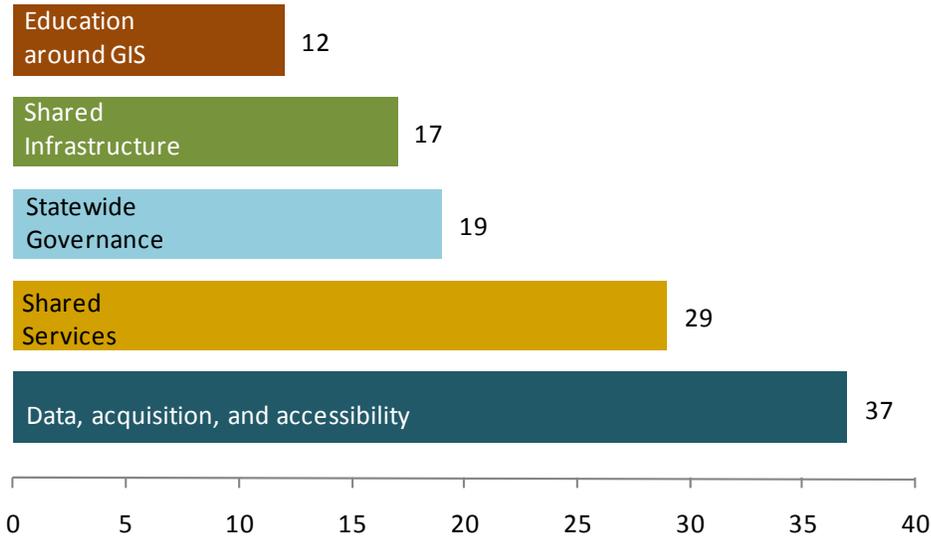


- Almost two-thirds (66%) of respondents identified themselves as GIS analysts or managers.
- The “Other” category includes database administrators, business users, and public application users.

### 5.3 Summary Survey Results: Priorities for Strategic Plan

Exhibit 3 shows the five key areas in improving statewide GIS that respondents felt were most important for their organization. Respondents were able to choose more than one key area of importance. As a result, there were 114 total responses generated by the 47 survey takers who answered the question.

**Exhibit 3: Most Important Key Areas (114 Responses from 47 Respondents)**



- Data, acquisition of data, and data accessibility was identified by the majority of respondents as an important area for improving statewide GIS.
- Shared services was also strongly supported by survey respondents.
- A majority (12) of the survey takers who responded that statewide governance is an important key area represent state agencies.
- State agencies' representatives were also the main respondents who said that shared infrastructure is an important key area.
- Education was deemed important by the least number of respondents, though they were spread across different organization types.

Individual respondents' comments are summarized below to extract overarching themes that will be helpful in creation of statewide GIS strategic plan. All survey responses are available in **Attachment F**. The overarching themes are presented in terms of key issues and challenges, and opportunities. These themes include:

- Coordination and Partnership Opportunities
- Data Sharing
- Data Quality and Standards
- Education
- Other Considerations

## Coordination and Partnership Opportunities

### Key Issues and Challenges

- Many respondents focused on better GIS coordination within their organizations; their concern was fragmentation of GIS data and processes.
- Respondents proposed that GIS should be implemented across regions within organizations, as it would allow managers to recognize and take advantage of overlapping infrastructures and gain economies of scale by not doing redundant inventories.
- Financial commitment is large as it relates to improving GIS. Therefore, managers and decision-makers should be able to see the appropriate return on investment, to make sure that long-term benefits outweigh the short-term costs.

### Opportunities

- There is a need for a full time state GIS office (including GIO) – an entity with dedicated resources to facilitate shared infrastructure; help coordinate state wide data access; provide limited stewardship of high use datasets; and help coordinate the discussion of future data acquisition, standards, shared infrastructure, and educational programs. There needs to be buy-in by everyone, including the Legislature. These functions could be performed by GIS Office staff:
  - Create a clear vision of what future statewide GIS should look like;
  - Develop an online catalog of metadata covering Washington state, while public, private, and nonprofit entities could log on and list their data, identifying content, contact information, and download location (if applicable). GIS users could then comment and add information to these entries;
  - Offer services limited to helping GIS users acquire data; and
  - Organize educational events/materials/media for both GIS users and laymen, addressing best practices, current technology, and current uses.
- The state could also create a GIS shop to provide cartography, database creation, and analysis services. There should be separate staff, so not to overburden the state GIS office. This should not be a replacement for agency GIS shops/staff. The shop could support itself (fee-based) and help support promotional media and educational opportunities.
- Explore new methods of outreach and social networking tools (twitter/facebook/blogs/rss feeds) to keep in touch with GIS users.
- Consider the private sector in partnership opportunities, as there are many businesses (i.e. Electric and Gas Utilities, Water Districts, Telecom, Cable Networks, etc.) that maintain GIS datasets.
- Share information and metadata with federal, state and local partners to minimize duplication on infrastructure, unsynchronized data and/or lack of data.
- Create web-based code and tool exchanges among GIS developers and technicians.
- Use statewide resources to facilitate assistance to small jurisdictions that cannot afford GIS hardware, software & personnel (since there are budgetary limitations in the smaller jurisdictions).

- The respondents identifies some specific efforts around existing and potential partnerships:
  - Focus on framework layers: WA-Trans, Hydro, Elevation, Cadastral, Geo-referenced imagery;
  - Parcel database development, maintenance and operation;
  - Partner for aerial photography;
  - Washington State Patrol is currently looking to partner with WSDOT to provide GIS maps of traffic and crime related data, along with 9-11 incidents to Troopers statewide;
  - Incorporate E911 with GIS: currently E911 systems are disconnected from the GIS side of the house;
  - National Agricultural Imagery Program; and
  - LiDAR acquisition and sharing of derived products

## Data Sharing

### Key Issues and Challenges

- It's challenging to collect data from the variety of source/agencies/entities that is accurate and current.
- Data should be accessible to the public and other entities.
- There is a need to know available data to minimize duplication; for any particular subject matter, it's necessary to have a steward who is responsible for maintenance and updates.
- Natural resources agencies are duplicating effort to host GIS hardware and software resources.

### Opportunities

- Create a central repository or web portal for data and GIS services. It should be easy to use, well organized, and updated in set increments of time. The portal could be similar to the large state agency GIS data download webpages, but larger. For the portal to be successful, the state will need to:
  - Ensure the quality of the data and the documentation (metadata);
  - Establish clear stewards for each dataset and access to those datasets; and
  - Make data exportable in easy to use formats like KML and GeoRSS.
- Develop a publicly accessible spatial data viewing web site that is capable of providing a customized interface based on an entity's need. This would promote more public participation in decision-making processes.
- Establish shared geospatial services (cartographic and geoprocessing); develop a geospatial services "portal" where shared services could be accessed. Identify and support a common application that can be used by all in order to use the shared geospatial services.
- Design state web mapping applications to facilitate user contribution (edits, updates, error corrections).
- Create regional base map layers.
- No shared initiative will be accorded any level of priority without a state mandate; the changes need to be mandated and funded accordingly.

## Data Quality and Standards

### Key Issues and Challenges

- A number of issues have been identified with regard to data standards, including attribute fields do not match from one jurisdiction to the next, and a lack of metadata.
- There is a lack of commonly used “official” and authoritative versions of data that are shared and updated on a regular basis.
- Data stewardship (making sure layers are updated and documented consistently) was frequently cited as a challenge.
- Difficulty assessing data quality and accuracy: there is a lot of available data, but no documentation on how it was created and when it was updated.
- There is a need for most current information, including base data, imagery and updated contacts from multiple agencies that provide geospatial information.
- There is a need for more available information in formats that are usable in consumer mapping applications such as Google Earth and Bing Maps, KML and GeoRSS.
- The natural resource agencies each have different GIS data sets and are making regulatory and resource-restoration decisions on differing versions of what should be a common set of geospatial data.

### Opportunities

- Establish state (or adopt national) **standards** for all GIS base data (i.e. roads, hydrographic, parcels, traffic incident data, etc) to facilitate easy data sharing.
- **Adopt the best technology** for a business, which is not always an ESRI product. Data should be available in the OGC approved standard compliant format such as GML and WMS, not proprietary format.

## Education

### Key Issues and Challenges

- Some decision-makers are unaware of key technologies required to succeed in the 21st century; they need to understand what it means to "think spatially."
- Make sure that users know how to use the spatial data (technical GIS skills as well as understanding of limitations of use).

### Opportunities

- There is a need for educating management, staff, and decision-makers about GIS capabilities, complexities, and the need for more resources.
- Educate decision-makers about GIS: hold seminars and training sessions for the decision-makers (City/County administrators, commissioners/council, legislators, etc.). Advocate recognition of GIS by IT leadership.
- Work with local user groups & state chapters of URISA, ASPRS, etc. Hold regional GIS forums each quarter where people demonstrate how they use GIS.
- Publish best practices, success stories, coordination opportunities.

## Other Considerations

### Challenges

- Funding for development, maintenance, and operation of framework data layers is difficult to obtain.
- Maintaining software licenses and purchasing upgrades are cost prohibitive.
- There are fragmented resources (people, hardware, software), lack of focus/direction, lack of recognition/understanding of the true value of GIS.
- Geospatial tools of photogrammetric technology used for the management of the Washington's natural resources, are in jeopardy due primarily to lack of funding.

### Opportunities

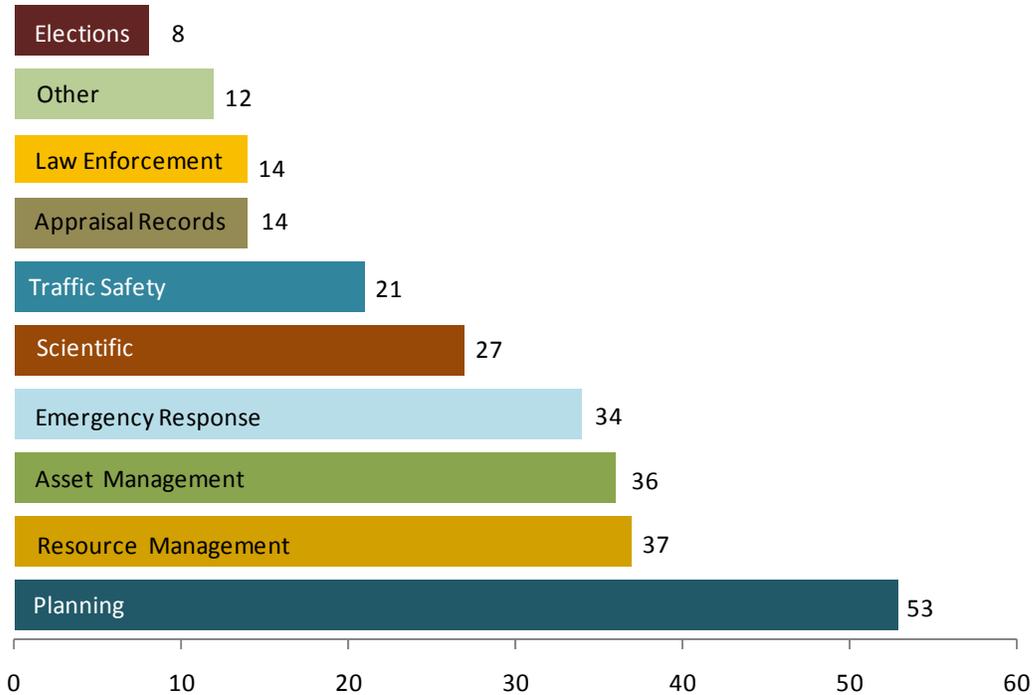
- This planning effort should build on the previous plan while considering new capabilities and new needs.
- Prioritize plan's goals and objectives and tackle the low-hanging fruit first.
- Consult with and listen to GIS users, more than with managers.
- Opportunity exists to develop a common funding model based on data steward agencies that will serve all agencies well into the future.

## 5.4 Summary Survey Results: Current GIS Use

### Principal business uses of mapping, location tools and/or GIS

Survey respondents were asked to identify the primary business uses for GIS within their organization. Respondents were able to select more than one business use. All 59 survey respondents answered the question, generating 256 responses. Exhibit 4 shows the responses.

**Exhibit 4: Primary Business Uses of GIS (256 Responses from 59 Respondents)**



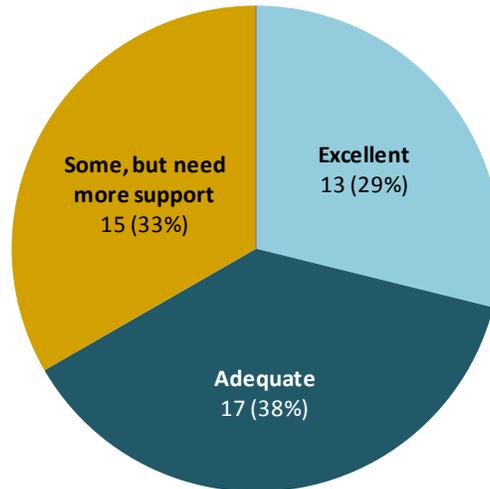
- Planning is the most common business use for GIS among respondents, far exceeding responses for other uses.
- Resource management, asset management, and emergency response are also major uses for GIS and are closely ranked.

*In addition, please see the verbatim survey results in **Attachment F** for respondents' specific GIS uses.*

### Level of GIS support and services for respondents' business functions

Survey respondents were asked to characterize the level of support for GIS business functions in their organizations. The following response options were available: excellent support, adequate support, some support, and no access to GIS. Exhibit 5 shows the distribution of 45 responses across the three options selected by the survey takers.

**Exhibit 5: Organization Support for GIS (45 Respondents)**

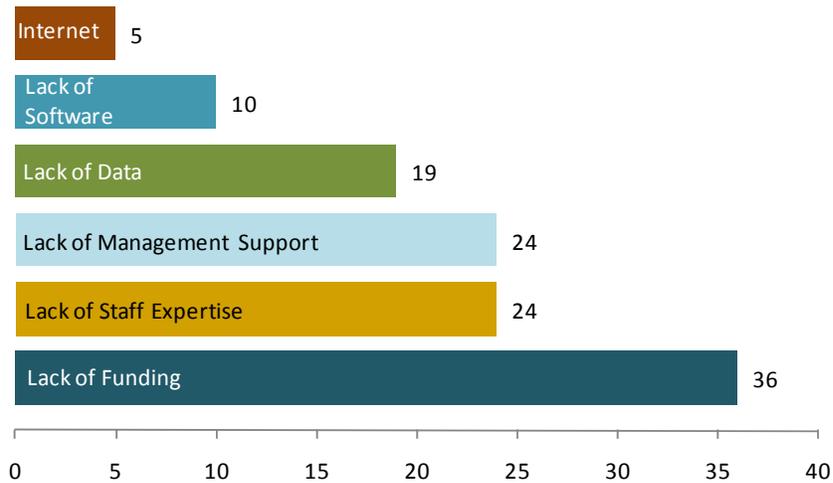


- Responses were fairly evenly distributed, with a slight majority feeling they have adequate support for GIS at their organizations.
- A little more than one-third of respondents said they need more support for GIS at their organization.

### Constraints or impediments in obtaining GIS support

Respondents were asked to highlight impediments to GIS support at their organizations and were able to choose more than one response. The 43 survey takers who answered the question generated 118 responses (Exhibit 6).

**Exhibit 6: GIS Support Impediments (118 Responses from 43 Respondents)**

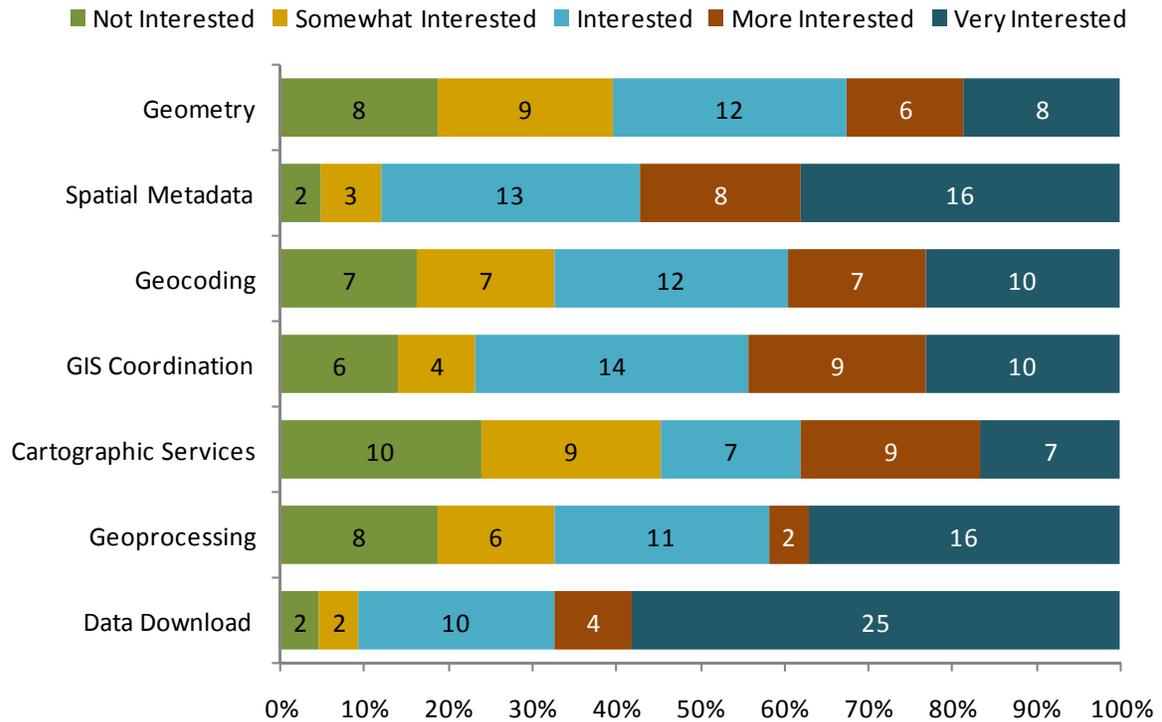


- Lack of adequate funding was highlighted by the majority of respondents as an impediment to adequate GIS support.
- Lack of staff expertise and lack of management support were also selected as major impediments.
- Lack of data received the fourth-most responses as an impediment, which is surprising given the support for addressing data issues in the statewide GIS plans.

## Enterprise GIS

Respondents were asked to rate their interest in various Enterprise GIS capabilities. 44 respondents answered the question, but not every respondent rated their interest in every capability. Exhibit 7 shows respondents level of interest.

**Exhibit 7: Interest in Enterprise GIS capabilities (44 Respondents)**

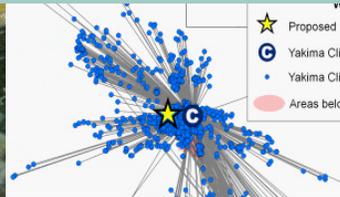
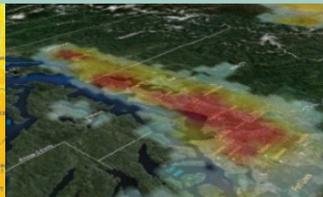
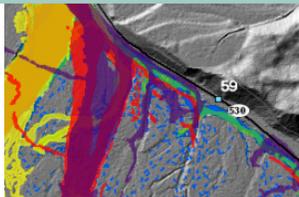


- There is a high level of interest in data download capabilities. Spatial metadata also generated a lot of interest, indicating that enterprise data capabilities would be popular if available as web services.
- Geoprocessing and geocoding services also generated a lot of interest among respondents, with 29 individuals expressing that they are interested, more interested, or very interested.
- Cartographic services generated the least interest, with 19 respondents indicating no interest or a low level of interest.

*In addition, please see the verbatim survey results in **Attachment F** for respondents' specific comments on enterprise GIS within their organizations.*



**ATTACHMENT A**  
**Regional Listening Session Flyer**



# WE NEED YOUR INPUT!

## STATEWIDE GIS STRATEGIC AND BUSINESS PLANS

### Regional Listening Sessions

All people, at all levels, and in all industries are either directly or indirectly affected by geographic information technology. Please join in the 2009 statewide effort to develop a new focus for GIS in Washington.

- What are the most important GIS issues in the state right now? The most important issues for your community?
- What are the State's major strategic opportunities for GIS?
- The most important thing the state could do to advance the statewide GIS is...

Please come to the Listening Session most convenient for you:

**EVERETT**  
 Tuesday, October 27  
 9 am - 12 pm  
 Everett Community College  
 Gray Wolf Hall, Rm 288  
**2000 Tower Street**  
**Everett, WA 98201**

**ELLENSBURG**  
 Thursday, October 29  
 9 am - 12 pm  
 City Council Chamber Room  
**501 N Anderson Street**  
**Ellensburg, WA 98926**

**SPOKANE**  
 Wednesday, November 4  
 9 am - 12 pm  
 WSU Riverpoint Campus  
 Phase 1 Classroom Bldg, Rm 148  
**412 E Spokane Blvd**  
**Spokane, WA 99202**

**OLYMPIA**  
 Thursday, October 22  
 9 am - 12 pm  
 Forum Bldg., DIS Boardroom  
**605 E 11th Ave**  
**Olympia, WA 98501**

**TRI-CITIES**  
 Thursday, November 5  
 9 am - 12 pm  
 Benton County Emergency Services  
 EOC Room  
**651 Truman Ave**  
**Richland, WA 99352**

**TRAVEL ASSISTANCE IS AVAILABLE**

Please **RSVP** to:  
 Joy Paulus at **joyp@dis.wa.gov**

**Can't attend? Fill out an On-Line Survey at:**

**<http://wagic.wa.gov/2009GISPlanning/Survey.htm>**

**Survey will open by end of day October 5, 2009 and close no earlier than November 10, 2009**

For more information about the Project, please visit: **<http://wagic.wa.gov/2009GISPlanning/>**; or contact: Joy Paulus at **joyp@dis.wa.gov**

*The Federal Geographic Data Committee (FGDC) in partnership with the USGS and WAGIC provided funding for this activity*

**ATTACHMENT B**  
**Regional Listening Session Agenda**



# WAGIC GIS STRATEGIC AND BUSINESS PLANS

## Regional Listening Sessions

### A G E N D A

#### Meeting Purpose

- Share information about statewide GIS strategic and business plans
- Obtain stakeholder feedback to help guide the update of statewide GIS strategic plan and development of business plan

#### 9:00 Welcome & Introductions (refreshments provided)

- Introductory remarks
- Introductions
- Review of today's agenda

#### 9:15 Project Overview

- Q & A

#### 9:35 Charge to All for Small Group Discussions

- Process for breaking into discussion groups
- Review discussion questions and reporting out process

#### 9:40 Small Group Discussions: Statewide GIS Challenges & Opportunities

1. What are the most important GIS issues and challenges in the state right now? What are some constraints or impediments in obtaining the GIS support and services?
2. In the following key areas please brainstorm what is working well and what could be improved in your organization, across organizations, as well as across the state:
  - a. Data, acquisition of data, and data accessibility
  - b. Shared services to provide data and services to customers
  - c. Statewide governance and coordination
  - d. Shared infrastructure (hardware, software, hosting)
  - e. Education around GIS
3. What are the major coordinating and partnership opportunities for Washington's geospatial technology today?
4. What kind of GIS enterprise capabilities are desired?
5. Open discussion and summary: What are the key, most important issues your group identified?

#### 10:45 Break (refreshments provided)

#### 11:00 Group Reporting and Open Discussion

#### 11:50 Summary of the Meeting and Next Steps

#### 12:00 Adjourn

**ATTACHMENT C**  
**Regional Listening Session Attendees**

## ATTACHMENT C

### REGIONAL LISTENING SESSION ATTENDEES

#### EVERETT

Aaron Racicot, Z-Pulley Inc.

Alan Smith, WSDOT

Allison Bailey, Sound GIS

Andy Weiss, WA Department of Fish and Wildlife

Anita Marrero, City of Mukilteo

Ann Boyd, City of Bellevue

Chad Hudson, City of Marysville

Dale Tubat, WSDOT

Dan Saul, WA Department of Ecology

Dana Trethewy, City of Seattle DOT

Darshan Dorsey, US Army Corps of Engineers

Ed Fairbanks, Snohomish County

Eiko Toguchi, Tulalip Tribes

Jaime Crawford, Critigen

Jeff Anderson, Community Transit

Jennifer Schmidt, Herrera Environmental Consultants

Katie Kelleher, City of Arlington

Kelly Durst, FEMA

Kerry Lyste, Everett Community College

Kevin Gibson, Student at Everett Community College

Lawrence Lin, US Army Corps of Engineers

Lynne Bridges, City of Arlington

Mark McDonald, WSDOT

Matthew Parsons, UW Libraries

Rob Simmonds, Snohomish County

Ruben Rodriguez, Herrera Environmental Consultants

Sally Hawkins, Student

Terry Johnson, WA Department of Fish and Wildlife

Tim Young, WA Department of Fish and Wildlife

Tom Shindler, Clallam County

## OLYMPIA

Brian Gillespie, WA Utilities and Transportation Commission

Carlos Diaz, The Evergreen State College

Cathy Waller, WA Military Dept

Dan Miller, WA Military Dept

Dave Cullom, WA Utilities and Transportation Commission

David Wright, Department of Revenue

David Valiant, Secretary of State

Deborah Naslund, WA Department of Natural Resources

Dick Petermann, WA Department of Natural Resources

Doretta Collins, WA Department of Natural Resources

Douglas Tooley

Gary Letzring, Land Surveyors Association of Washington

George Alvarado, Department of Revenue

George Horning, King County GIS Center

George Spencer, WSDOT

Greg Tudor, WA Department of Natural Resources

Jennifer Radcliff, Mason County GIS

Marty Parsons, Department of Revenue

Marty Balikov, ESRI

Matthieu Denuelle, ESRI

Michelle Blake, WSDOT

Mike Mehim, OFM

Nick Pharris, Secretary of State

Rebecca Niggemann, WA Department of Natural Resources

Steve Miller, WA Department of Natural Resources

Tami Griffin, WSDOT

Terry McLaughlin, Cowlitz Assessor

Tony Hartrich, Quinault Indian Nation

## **SPOKANE**

Amber Joplin, WSU GIS Lab  
Eva Shoemaker-Maffei, Stevens County  
Frank Roberts, Couer d'Alene Tribe  
Ian Von Essen, Spokane County  
Josh Shelton, Pend Oreille County  
Kevin Shipman, Spokane Regional Transportation Council  
Mike McGuire, Ascent GIS  
Mike Fallon, Bureau of Land Management  
Monty Chamberlain, Spokane County Engineers  
Rick Rupp, WSU - Pullman  
Steve Allenton, City of Spokane Public Works  
Sylvia Ferrin, Spokane Regional Transportation Council

## **TRI-CITIES**

Brandon Lopez, City of Richland  
Brian Malley, BFCOG  
Byron Gessel, Lockheed Martin  
Craig Hamilton, BCES  
Daniel Penwell, City of Richland  
Dann Borden, Franklin County  
Darrel Sowards, City of Richland Survey  
David Granata, City of Kennewick  
Fiorinda Paez, Benton County GIS  
Lyle Ball, BCEM  
Lynne DeSantis, Franklin County Public Works  
Mike McGuire, Surdex  
Patty Yahne, Benton County Assessor  
Richard Allen, Richland PU  
Steve Rush, MSA – Hanford

**ATTACHMENT D**  
**Individual Regional Listening Session Summaries**

## ATTACHMENT D

### Individual Regional Listening Session Summaries

Below are the individual meeting summaries for each of the four regional listening sessions. They include the information that was written on the flip charts by participants at each meeting. Of all participants in each small group, one was responsible for taking notes. Thus each listening session summary was written by a different person and may not be consistent in style with other listening session summaries. Points highlighted in bold text were selected by the discussion group as the most important and were discussed in the large-group report out.

#### OLYMPIA REGIONAL LISTENING SESSION (OCTOBER 22, 2009)

##### Olympia Group 1

###### A. Report-out

- Need focus on technical aspects
  - Funding
  - Accuracy
  - Level of detail
- Accessibility of information, need more publicly available
- Break silos – different legislative mandates
- Standardize County resources
  - What is needed across the board?
  - Duplicate data
- Different customers with different business needs
- Duplications provide opportunity to reduce cost
- Shared infrastructure
- Formal needs assessment/inventory → figure out State GIS structure
- Education of users and decision-makers
- Metadata

###### B. Full Notes

- Lack of funding
  - Lack of dedicated funding for GIS within agencies
  - **Need better focus for technical aspects (including accuracy of data)**
  - Lack of common data standards (creates challenges in combining data sets)
  - Lack of staffing → cuts, don't understand value of technical people
  - Lack of management understanding or support
- **Accessibility of information → different levels across jurisdictions → constraints**
  - Each county needs orthophotos (DOT has)
  - Everyone wants to use the information for free
  - **How do we break the silo between entities' data?**
  - **Standardize what each county has available to them:** need a central coordinating agency

- Centralized Systems
  - Get buy-in from the leadership and funding to consolidate data → then get technical people to develop
  - Need more accurate control for county/city-level data
  - DNR has, but not accurate enough
  - **Shared services across entities (private, city, county, state)**
  - **Different customers = different needs. Who are they? Understanding business needs**
  - Determine what data is similar across entities, then look at scale
  - Inventory types of information needed
  - Look at scale that is affordable to maintain and update
- **Find duplicates and present as opportunities to reduce costs**
  - **Defining need groups**
  - **Shared infrastructure – make it work**
  - Governance issues (service level agreements)
  - Like county subscription service
- **State subscription service, so don't have to subscribe to every city and county, etc.**
- Technical experience of each agency needs to be in common spot with common funding for shared services
  - Tools and data provided by central technology people
  - Single source
  - **State GIS**
  - Issue of quality control
  - Data contribution, each department sponsor their own theme
  - Cost allocation
- **Formal needs assessment first, then establish State GIS**
- Separate funding source for technology data, each agency has different business needs
- Centralize and decentralize over and over again
- Education about what data actually is
  - The understanding of the data
  - Difference between accuracy and precision
  - Educating early
  - Need education about data organization and data design (e.g. projections)

## Olympia Group 2

### A. Report-out

- Central GIS repository of data
  - Provide coordination
  - Collaborative relationship with locals → share data and support the have-nots
- Consistent data: correcting data mechanism
- Legislature will fund political projects → incorporate local precinct data
- Accessible data
- Shared infrastructure
- Success: ortho portal, WA Transportation

**B. Full Notes****Funding (overall)**

- **Better mechanisms for data sharing**
  - Need to work off the same data
  - Web services available by data providers
- Marine data is needed for various topics
  - Sanctuaries, renewable energy (waves, wind), fisheries, habitats
  - Accurate bathymetric data
- Stewardship needs to be refined/established
- **Governance model**
  - Central group to coordinate
  - WA/WC process to manage, change, and assure data accuracy

**Coordination between State and local**

- Lack of “correct” data or lack of data itself
- Some counties are missing data
- Determine official data layer (authoritative)
- Procedure to exchange data between authorities (State, Federal, Local)
- Reinforce state law to collect data regularly (SOS)

**Emphasizing shared infrastructure**

- Software (statewide agreement)
- Staff to support infrastructure, network, services
- Highlight Orthoportal as a joint project with success
- Data development not a management priority
- Associating ROI with data development
- Parcel, WA Trans, working groups as a success
- Need for more support behind GIS education “have” and “have nots”
- Define how to implement shared services: determine rules with hardware, software, cost, usage, security, agreement, support, etc.
- Publishing best practices, success stories, coordination of them
- Standards publicized and shared
- Create a governance body with sustainable funding

**Fund coordination of shared services (GIS office centrally established)**

- **Emphasizing connections between politics and geography**
- Address quality across the state
- Find localities comprehensive plans

**Publicly accessible data – centrally located**

- Finish framework layers
- User interface
- Capabilities of accessing data, geoprocessing
- Leverage existing services within agencies, localities, natives

- Data and tools for climate change
  - Reducing vehicle miles traveled
  - Greenhouse gases
  - Measure carbon footprint
  - Impact of results/analysis
- Use of “hot topics” to spark interest at executive level for funding
- Statewide boundary annexation survey is a coordinated opportunity
- Define “enterprise”

**GIS central office as a resource to provide:**

- Data
- Coordinating with internal/external entities (local, federal, tribal, public)
- Portal services housed in GIS office
- Driving force for GIS
- Be a management office
- Help agencies focus on their own business instead of finding base data
- Funding sustainable
- “GIO” with actual “power”, capabilities
- Putting framework groups into GIS office
- Geoprocessing, cartography, geocoding, metadata hosting, standards, geometry

### Olympia Group 3

#### A. Report-out

- Need a “champion” such as GIO Officer to raise awareness with legislative, executive management, and public for long-term strategic planning, funding and support
- Resources allocated to GIO to move agenda → shared infrastructure and services
- Need common way of sharing data and services, common place to share data and services
- Educate decision makers and citizens on GIS technology
- Lack of long-term strategic funding
  - Lack of GIO, no champion
  - Lack of understanding of GIS in executive management within state agencies

#### B. Full Notes

- Lack of integration, lack of support
  - Lack of understanding of the technology
  - **No “champion”, funding long-term, strategic money for GIS**
  - Outdated mandates, outdated job descriptions
  - No state GIS job classification
  - **Lack of understanding in the legislature and executive management within agencies**
  - Statewide financing mechanism broken (for GIS)
  - Lack of educating the public on what GIS can do
- Availability of GIS data on the web should be increased and given a higher profile priority
  - Mapping applications using the data, putting data in the public’s hands
  - Limitation on purchased data, restrictions on use of data (statewide parcel database)
  - Single point to access state agency datasets (Utah does), more efficient way of accessing data

- Easier to get money to create data, more difficult to get money to maintain the data
- Federal money focused on data models, not the spatial accuracy of the data in the model
- Hosting infrastructure for web services
  - Control access point for getting web services
  - Barriers to accessing web services
  - Imagery portal working well (WA location finder)
  - SGS initiative has potential
- Governance and coordination is starting to happen for GIS
  - Willingness to contribute staff time to working on projects
  - Positions not dedicated to supporting coordination projects
  - No WA GIO
  - Need legislative support for GIS coordination projects
- Need sharing of GIS infrastructure, especially for smaller agencies to have access to GIS infrastructure
  - Funding mechanism for supporting a combination of GIS infrastructure throughout state agencies
  - Central host but agencies maintain control of content
- Educate decision makers about GIS
  - Educate decision-makers on the components of a GIS (i.e. software, hardware, databases, etc.)
  - High school, middle school geography education
- Coordination needs to be brought to higher level policy and decision-makers
  - Need “champion” for GIS at the executive level
  - Can be agency or high-level executive
  - GIS education campaign for public awareness
- Shared services, shared data
  - Facilitate coordination between city, county, tribal, federal, private and state entities

## Olympia Group 4

### A. Report-out

- Officials don't understand value/need of GIS technology
  - Duplication of efforts
  - Focus on info delivery, not technology
  - Needs for business analysis
  - Lack of incentive for local government
- WAGIC is a nice platform for integrating state-level data
  - Needed at the county level
  - Shared services need governances, documentation, guidelines/agreements
- Public disclosure law out of sync with technology
- Need local level education around business needs
  - WAGIC's role
  - GIO – champion

- Education
  - Public/Private partner
  - Collaborative and central
- Centralized data store
  - Portal for meta-data
  - Standardized guidelines

### B. Full Notes

- Lack of money
- Lack of statewide governance, compartmentalized governance
- No connection between state and local
- Digital divide – have's and have not's continues with no GIS
- Lack of operational statewide datasets
- **Officials do not understand the needs and values for investment in GIS**
- **Lacking cohesive business information delivery perspective (IT/GIS integration) currently duplicate efforts**
- Information disclosure an issue for data sharing
- SLA development/formalization is needed
- Lack of documentation
- Lack of value-added products contribute to understanding
- Data sharing
- **Lack of spending the time and valuing business analysis (looking at the big picture)**
- **Lack of incentive for local governments to participate in higher level projects**
- ETL tools have improved accessibility and usability of the data
- **WAGIC has helped provide a forum for discussing sharing/integration at the state level**
  - **Counties are another story, the Framework efforts have helped**
  - **Framework efforts – GOOD individual effort – needs topological integration**
  - It would be good to have a central data portal
- The key to help solve money issues, including disclosure issues:
  - Construction innovation
  - Read-only access to data, online catalogs/data access
  - **Needs governance, documentation, business modeling for shared services, guidelines (public disclosure)**
- Once we have a business model, then we can help determine infrastructure
- **Public disclosure law not up to date with technology**
- Structure to support access within law and with changing technology's impact
- **Individual training of legislative measures has been positive. Need wider education efforts – locals too. "Business need" education. Could be WAGIC role – need a "champion" to make this happen**
- **Education efforts for decision makers – WAGIC**
- Framework efforts – centralization effort for data
- **Public/Private partnerships – have not been explored much at this point**
- Addressing standards (geocoding/street addressing)
- **Imagery, wider data sharing/collaboration/centralization**
- Shared services, value added products
- **Centralized data store or pointers that are contributed to metadata – central repository-portal**

- **Application access**
- **Central search engine**
- **Standards, governance, guidelines**

## Olympia Group 5

### A. Report-out

- Data Availability
  - Historic info for education
  - Archiving of data
  - Metadata
  - Sensitivity/sharing
- Coordinating efforts – clear understanding of who has what
- Better communication – knowing who to talk to
- Place to get info – clearinghouse
- Funding
  - Educating legislature about needs
  - Find funding mechanisms to get shared services in place
  - Identify and catalogue needs and services
  - Haves and have-nots
- Education of higher-ups/management and legislature about importance of GIS → need funding stream
- Cities, counties, state should be talking and pooling resources
- Create a repository of data for sharing
- Establish ownership of data
- Create a GIO office

### B. Full Notes

- **Data Availability**
  - Archived data
  - Educational, change detection, format issues (Interoperability), Metadata, data sensitivity
  - Constraints: coordination of effort
- **Data Access**
  - **Data licensing and restrictions are a hindrance to sharing**
  - **Where is the data and how do you find the authorized datasets?**
  - **Coordination between agencies and organization. Could be better**
  - Dedication of effort
  - Official list of who are the stewards, recognized sources – at all levels of governments
- Shared services – not necessarily centralized but well-linked
  - **Better communications about what each if the agencies/organizations have - metadata clearinghouse only meets some of the needs**
  - Need better tools to share data and services and to fund those services
  - Expectation that there are services available and should be available and accessible for efficiencies purposes

- Legislative direction informed by GIS governing body
  - More bodies to help coordinate GIS activities in state
  - Education of GIO
- **Place to get info about GIS legislation and at the state level and what the implications are to local and county governments – what does it all mean?**
- **Funding of GIS for shared data and shared perspectives**
- Better coordination of EM, Safety, health and other related needs so we're only doing it once (flooding and other agencies)
- Critical for historical data preservation
- Helps reduction of duplicate efforts in GIS processing and storage
- Could help to provide more current data to organizations and it would help to cut the time to share data across multiple organizations
- Increase the availability of data
- Central repository → what are the expectation of what would be stored there and from who
  - Need process in place so it would make the above happen
  - Look at lessons learned from WA Trans
  - Service should be shared too without cost but with coordinator
  - ELA/MPA questions for the State – availability of structure for organizations that can't afford it
  - Shared standard, components and services that are agreed upon
  - More web services to be consumed
  - Catalog services to be consumed
- **Fund mechanism to get shared service in place**
- **Need a way for these services to be identified and cataloged, but agencies and organizations don't have the time to do it**
- Need better understanding of who is doing shared services and the interagency agreement to make the sharing of sources
- Train the trainer – coordinate between organizations to leverage knowledge
- Need funding to take advantage of some good opportunities that exist (ESRI, DNR, etc)
- Pool and advertise these opportunities
- **Education of higher-ups (management), education of legislature (business oriented education, focus on their successes H1N1, etc)**
- Inclusion of GIS in cross-curricular education
- Show practical applications that are doable in organizations
- Public outreach and education on how information is used and can be used
- **Get cities, State and counties to talk and coordinate with each other openly at no cost**
- **Pooling of dollars and resources together to accomplish tasks**
- Shared commercial data by organization (site license/ELAs)
- **Repository for data (funded) so we can share our data**
- Index of data and services that are available
- Common incident response (Common COP)
- GIO

**EVERETT REGIONAL LISTENING SESSION (OCTOBER 27, 2009)****Everett Group 1****A. Report-out**

- Consistent framework layers
- Communication between state, local, and private organizations. Data flow assistance
- Two thumbs up for LiDAR Consortium (UW Parcels); need more LiDAR
- Advanced planning/notice for data acquisition projects (budgets)
- Web services/apps production platform (centralized/enterprise level)
- More money

**B. Full Notes****Challenges**

- Framework layers→ consistent hydro, cadastral, WSDOT, funding for this
  - 3 different layers of hydro
  - New finer scale data→how does this get pushed up? What to do with integration?
  - What about different resolutions? Use best at your level
- With same schema, consistent geography, consistent tables
- Accuracy standards
  - Map accuracy standards, 90% +/- 40 feet of true locations
  - Inaccuracy of data based on stat standards can provide lawsuits
  - Integrating countywide data, accuracy between counties
  - Grant funding to counties to clean up their data
- Revenue stream for sharing data, funding issue at state level
- Very little contact between state agencies and counties
- Township, section, range
- Data consortium at state level → data sharing service. How does it get disseminated?
- State legislation of surveyors, PLSS
- **Coordination between agencies, federal level**
- **Different levels of GIS expertise—varies by jurisdiction, funding to help motivate it**

**Everett Group 2****A. Report-out**

- Budgets are diminishing – need to integrate data across agencies
- How do we interact with the private industry?
- Need more LIDAR data
- Framework layers need to be audited to see what is working and what is not
- Align service architecture with data needs
- Lack of statewide forum for project coordination and data discovery
- Champion
- Need budget for infrastructure
- Need to educate leaders and management
  - More of a marketing issue
  - Devaluing of analytics, just want map

- Potential opportunities, but no funding
- How to align strategy with business requirements?
- State safety net to make sure projects are completed and delivered
- State should facilitate integration

## B. Full Notes

### Challenges

- **Issue—budgets (diminishing), lack of resources**
- **Need—want state to facilitate integration across agencies**
  - Central state GIS
  - Floundering framework
  - Political impediments
  - Internal integration difficulties; magnified when expanded
- **Need – support for participation from state as well as top down support.** Role of mandate?
- Challenge – growth of mapping on web (google, bing) and implications on how we do business
  - Selecting standards
  - **How do we interact with private industry?**
  - Can we leverage this trend?

### Data

- LIDAR—need more
- NAIP—good example of cooperative data acquisition/dissemination
- PSLC good example of integration
- Framework layers still need streets layer
  - Scale: variable business requirements (state vs. city level)
  - Control

### Shared Services

- Example: Orthoportal not adequately funded
- Lots of potential
- Need standardized service level agreements and service contracts/protocols
- Issue: responsiveness/performance/liability
- **Issue: aligning business needs with service architecture**

### Governance and Coordination

- **Lack of a statewide forum**
  - **Project coordination**
  - **Data discovery**
- Lack of understanding relationship between GIT, WAGIC, FMG, etc. Need to clarify roles and responsibilities
- **Need: leader/champion for statewide GIS coordination**
- Back to integration issue
  - Data acquisition
  - Data central
  - Computability
- Current lack of money prohibits opportunities even though there are lots of potential

- UW Parcel work group model as example of low cost coordination
- State guidelines on data sharing (i.e. Seattle data for UW researchers)
- Need: data clearinghouse – centralized; create data awareness

#### Shared Infrastructure

- Need a plan first before implementing infrastructure
- Issue: cost road blocks to sharing
  - Overcoming initial cost to share data
  - Cost of making something (data) into a product
    - Metadata
    - Attributes
    - Data standard
  - Cloud computing?

#### Education

- Biggest shortcomings
  - People at top don't know what GIS is/does and its value
  - **Need to educate leaders and upper level managers**
- **Issue: devaluing of analytical components of GIS – people simply want map**

#### Enterprise GIS

- GIS enterprise needs money to work
- **Need: an audit of the framework project: what's working, what's not**
- Evaluate an enterprise vs centralized approach
- Enterprise includes federated approach
- How align enterprise?
- Strategy with agency, business requirements, the "individual vs. the group"
- State as safety net for group projects—make sure there's always a deliverable vs. dropping the projects

### Everett Group 3

#### A. Report-out

- Obtaining funding
- Need for data standards at all government levels
- Data coordination
  - Clearinghouse
  - Searchable
  - Chatboard
  - Distribution point
- Mechanism for data quality feedback
- More multi-level GIS education opportunities
- Finding the balance between centralized and distributed GIS
- Getting GIS products into the hands of staff/stakeholders/citizens

**B. Full Notes****Challenges**

- Challenge is getting funds
  - Employees and training
  - Northwest and southwest
- Data acquisition
  - Lots of different sources
  - Either don't have it or can't get
- Want standard (e.g. traffic data—special format in excel)
- Priorities: data standard
- Lack of data standard/format and data availability
- Don't want to move to new technologies
- Challenges—keeping skills current—new technologies
- Need continuing education for employed people

**Shared Services**

- Public website portal for aerials
- LIDAR 10-meter DEM, funding for LIDAR
- Data sharing (e.g. LIDAR consortium, partnerships for LIDAR projects)
- Funding for shared infrastructure: need to put existing house in order versus collecting new data
- One central organization for data collection, data storage
- Metadata. Not aware of bigger picture, how it will be used
- Planning and communication about collection, etc. Communication among agencies

**Web Services**

- Web capabilities—ArcServer websites, standardized infrastructures, testing and development platforms, centralized source
  - More accuracy
  - Data that is updated, not static. Organization to feed state data, integrate all together
  - Personnel and resources for data integration
  - Requirements at level of state, funding for counties
- How does management happen?
- PR campaign, voluntary buy-in, integration at state level
- Funding of person to meet GIS requirements

**Web Services and Data Sharing**

- Web services
  - Web-based dissemination
  - Data access via web
  - Data licensing constraints
  - Central data portal
  - Data distribution—liability and safety
  - Confidentiality and upkeep

- How do various governments integrate data sets? Example: street center line, updates and corrections
- How to submit changes and updates to data steward? Formalize this process and make a mechanism (example: National Hydrography Data, open street map)

### Shared Infrastructure

- State ortho portal
- WMS service is open
- Like this idea but need reliable network and hosting service – need to be funded/staffed to be available
- Cost share

### Data

- LIDAR for whole state, better stream data (location and attributes)
- Seafloor map
- Resources – who to call, GIS librarian and GIS data search engine (like Google for GIS). Chatboard statewide GIS – data, technical hosted by WAGIC?
- How to get more funding? (Example: City of Portland website)
- Take advantage of expertise at various levels of government
  - Data is best at local level
  - Upper levels of government have bigger picture

### Public and Education

- Pointing public in the right direction: where to go for data acquisition
- Central portal—agency and public use
- Need to educate managers about how long things take what kind of resources are needed
- Putting up web maps so the public can use them, then give feedback to managers in agencies
- Need a GIS champion at state level

### Enterprise GIS

- Every section uses same system and data sets
- On statewide level seems too grand—a lot to ask

## Everett Group 4

### A. Report-out

- Data discovery tool
  - Metadata tool
  - Data stewardship/ownership information
  - More accessible
- Shared infrastructure, web services for key data layers
- Education – not just about technology and software, focus on GIS capabilities and applications. Show business needs and ROI
- Stronger GIS Governance
  - Third party like WAGIC or University to act as coordinator
  - Need ROI to justify coordination
  - Local government need incentive

**B. Full Notes****Issues**

- Getting people to use GIS—they go to training but never actually use it
- Lots of data but finding it is the hard part, who to go to, what's in the warehouse
- They have difficult time finding it
- Multiple versions of the same dataset (depending on department)
- More WSDOT data
- Focus on web services (not just data): will remove burden of data management, as many people just need to view data and not manipulate it
- Inventory of web services
- Need data stewardship information: who's the owner of the information
- Need WMS services of NAIP
- Some people/users don't have the infrastructure to do web services
  - Third party hosting could be a solution
  - Good model at OSU library system
- Weak governance at the state level
- Education around GIS—educate people on different GIS technology (i.e. open source)
- Meet needs of organization—Google, ESRI, open source
- Education around GIS and not a focus on specific technology
- Can Washington State provide/fill a void around education? Need more WAGIC presence/outreach
- Snohomish County trying to work together to standardize between cities
  - Mentioned example of eGovAlliance
  - Would be nice to have something like that in Snohomish County
- Local jurisdictions need incentive from the state to participate in framework type activities

**Coordinating Opportunities**

- Leverage universities and counties, emergency response organizations
- Mandate standardization of data
- Always funding, time are in deficit
- Public safety has huge influence
- Coordination is huge across state agencies
  - Need more of it
  - Need statewide directory of data
  - No information about data stewardship
- Could you do an ROI to justify more sharing and coordination?
- Third party entity/organizations that people trust to act as data warehouse/repository
- Entity (WAGIC or other) that has the power/authority to gather data and disseminate information. Could this organization pull together data from multiple sources?
- Can non-state agencies (i.e. county, consultants, educators, etc.) post data somewhere where other people can consume?
- Need ROI to help justify more coordination

**Everett Group 5****A. Report-out**

- Cost of acquisition and maintaining data
- State could improve data distribution by providing a data directory of linkages to download sites
- Continue with the framework initiative and require standards for GIS data (with training and support to accomplish this)
- Provide shared resources for hardware/software deficient agencies
  - Also GIS staff (if possible)
  - Training for learning GIS
- Coordination of data acquisition projects to reduce costs and data redundancy
- Coordinate GIS educational/training services across jurisdictions

**B. Full Notes****Challenges**

- Data, cost of maintenance, cost of acquisition
- Consistency across jurisdictions, availability, accessibility
- Availability of raw data, unknown quality
- Lack of metadata—inconsistent metadata
- Public perception of data they have access to
- Difficulties in obtaining orthophotos and LIDAR due to costs
- Data gap between different entities (have and have nots)
- Need for better coordination for data collection (reduce duplication of effort)
- Need for framework data sets
- Confusion in distribution methods and sources
- Lack of resources in some entities
- Inconsistency in support/budget

**Data**

- Data storage is not a problem
- Some agencies have easy to use data download sites, some are free (e.g. Puget Sound LIDAR Consortium)
- Clarification about laws on charging for data dissemination
- State could improve data distribution by providing one download site or data directory for all data services
- Directive from above for data distribution directory and funding (consistent funding)

**Coordination**

- Continue with framework initiative
- Require standards for data – provide training and support
- Coordination of data acquisition projects – cost sharing
- Coordinate GIS educational training services across jurisdictions

**Infrastructure**

- Provide shared resources for deficient entities
  - Hardware, software, staff
  - Cost effective sharing of resources and training

**Education**

- More education opportunities
  - More people know how to use GIS, but don't have a deeper understanding of the subject
  - More GIS, geography, mapping classes in high school
  - Document jobs in GIS – WAGIC should track placement of GIS graduates... Keep statistics on placement of graduates in GIS related jobs

**Everett Group 6****A. Report-out**

- Data is an issue
  - Increase availability
  - Metadata
  - Decentralized political governance a major cause
- Improved tools/mechanisms for sharing data needed
  - Online web service and data directory
  - List of data terms for acquisition
- Evolve into data repository

**B. Full Notes****Key areas of concern**

- Data availability
- Gathering data is a challenge—differing among counties, cities, special districts, state, agencies, etc in:
  - Availability
  - Formats
  - Structures
  - Completeness
  - Ways to acquire
  - Metadata
- Vision: Easily available downloadable GIS data with metadata from all agencies willing to share their GIS data
- Playing field is very uneven with respect to data access
- Different interpretations/applications of open records
- Data sharing agreements important for some agencies

**Shared Services**

- Online web service/directory for data authors: questions, comments, data they have
- Statewide scope: informs of terms and conditions of use of data
- Contains web links to agency websites and contacts

**Statewide Governance and Coordination**

- Some state GIS websites are impressive: DNR, DOT, DOE
- What are the responsibilities with respect to data: state (highest), counties, cities, federal, etc.
- Data stewardship
- What happened to the framework effort?
- Decentralized political governance

**Shared Infrastructure**

- Cloud computing? 2020?
- Outside realm of IT comfort zones for parent datasets to kept outside the organization
- Cloud function – statewide data repository with copies of child datasets; read only access for all

**Education around GIS**

- Very available at universities and community colleges
- Problems/challenge of writing definitions of GIS job specs

**SPOKANE REGIONAL LISTENING SESSION (NOVEMBER 4, 2009)****Spokane Group 1****A. Report-out**

- Provide education about GIS to electeds and decision-makers at all levels, focusing on what GIS is and its capabilities
  - Demonstrate value of GIS – through ROI
  - Create awareness of GIS – potentially through “savings calculator” on WAGIC website, demonstrating increases in efficiencies due to application of GIS
- Create a GIO/GI office
  - GIO should provide single voice at state level
  - This person should be an advocate for GIS
  - To reach any outcomes, GIO would need a seat at the table, i.e. be engaged in state politics
- Have more GIS partnerships:
  - With federal agencies
  - With private sector
- Data portals coordination is important
  - Can be modeled similar to Inside Idaho
  - Should be a one stop-shop (for state, city, county, etc. data)
  - Data should have uniformity
  - Data standards should be created and applied
- Shared infrastructure is important
- More opportunities for consortia
- Enterprise GIS is generally desired, but on case by case basis

**B. Full Notes****Challenges and Opportunities**

- Need to establish awareness/education of elected department heads
- Demonstrate value of GIS through ROI
- Need single voice/GIO/Evangelist that would represent all in GIS, and also will have a seat at the table in local legislature
- There is a lack funding
  - Staff, education, standards, hard/software, programs
  - Feds? Private?
- Constraints:
  - Don't support funding and staff
  - There are egos involved, data is held closely
  - Without funding, we can't educate officials
  - We don't have staff to do technical work
  - Constraining development of standards
  - More efficiency
- Opportunities:
  - Demonstrating value, showing return on investment
  - Grants—federal, private, local
  - Public/private partnerships
- What is working well: data acquisition—NAIP, federal imagery, AVISTA consortium

**Coordination**

- Done well currently: NAIP Partnership, Avista consortium, some portals, Puget LiDAR
- Need improvement in coordination. Look at other portals, like “Inside Idaho”
- Data portals are needed. Consolidate Washington GIS Portal: “Inside Idaho” has a unified GIS portal
- Data standards are needed
- Not much is done well in statewide governance and coordination
- Needs improvement:
  - Need single voice at state level
  - Need more GIS staff in state GIS office
  - Need GIO and associated office that represents all entities
    - Funded coordinated position for government coordination
    - Understanding needs of municipalities, rural, enterprise
    - Provides advocacy, evangelist to educate decision-makers, charismatic leader
    - Needs to have a seat at the table with the Governor
    - Listen to all entities and sell GIS benefits at all levels
- Partnerships:
  - Consortia—Avista, Puget Sound LiDAR
  - Tribal, federal, and rural involvement is necessary
- Washington vision of GIS plan

- Working across jurisdictions
  - Spatial component, resolution
  - Expense of integration
- Washington vision is collaboration between county, local, private. The problem is there is no action on this vision.

#### **Education and Advocacy**

- GIS at state level
  - Need to increase awareness
  - Need to gather support
  - Education of officials and department heads, all levels of local government, officials and community leaders
- Non-user education needs improvement
- Create savings calculator and show ROI of GIS
- Need funding to accomplish this

#### **Data standards**

- Need standards for end product data
- Standard data models should be made available for guidance
- Framework standards for data sets should be documented and available online
- The State needs to pay attention to NAIOP:
  - The effort is heavily federally funded
  - Washington subcommittee of NAIOP is all volunteer
  - Access to NAIOP is important
- Access, network, electronic
- GIS enterprise is desired within jurisdictions
  - ArcSDE would be useful for counties (including rural)
  - Need to educate GIS implementer, users, and officials
  - GIS enterprise system creates efficiencies and forces sharing standards
- What is done well in shared infrastructure: site selector, ELA ESRI
- Everyone needs better access to state data
- Should work on uniformity between different data sources, coordination of standards, data integration. Example: WA TRANS and parcels

### **Spokane Group 2**

#### **A. Report-out**

- Need to create best practices/uniform standards
  - Standards will promote interoperability of data
  - One option would be to attach funding to willingness to follow recommendations (similar to what Oregon has done)
  - Need to help those with less resources (rural counties, cities)
  - Will increase efficiencies
- Education – outreach
- Facilitate development of best practices

- WAGIC role should include:
  - Building regional communities
    - Create social networking place/forum to interact, ask data questions (need core group to keep it going, moderator). UW has a similar forum.
  - Outreach
  - Subcommittees around framework layers
- Shared infrastructure should include services, not just data
- Create a GIO and GI Office
  - Need to have regional coordinators
  - The office should not be located in DIS, perhaps in OFM? (similar to MN)
- Need stronger coordination (WAGIC may be involved with this)
  - Role for localities to be vocal and push issues to state level
  - There is a need for public-private partnerships (e.g. Vista Orthophoto consortia, NAIOP, Puget Sound LiDAR)

## B. Full Notes

### Challenges

- There is no central Washington GIS portal/clearinghouse
- Perhaps GIS should be separate from Department of Information Services. Maybe move to Governor's office?
- State GIS structure is currently inefficient
- There is no GIS in Southeast Washington—none in municipal governments and no natural resources like northern counties, since it is all agricultural land
- People who don't know are intimidated by GIS
- Need **regional GIS centers** to set people up for success, especially for poor counties
- Not as much expertise in rural areas—people train and then leave, there is constant brain drain; no one to ask questions
  - Everyone does data differently
  - Lack of people who know about GIS

### Sharing data

- There is plenty of data out there and it needs more organization
- Need common data structure so outsiders can come find the data they need
- Open source software?
- Would be good to have templates for parcels/roads/etc.
- It is a struggle to keep software up and running, keep current on updates, etc.
- Need shared services for imagery:
  - Should be accessible, but have to go from agency to agency
  - Some, like DNR aeriels, are not available
- Agencies work independently, and frequently duplicate the work; they need to coordinate
- **There is one GIS data site in Montana, Idaho, and Oregon; 10 in Washington State**
- There is no place where you can see all growth management boundaries, land use data
- Need a metadata catalog that all agencies use
- Have-not counties can connect to server; requires funding source for GIS

- WSU is the best place to start up shared services:
  - Create a research and outreach center?
  - Can supply services to the state
- **Use universities as geospatial extension agents.** The capability exists, but there are no resources to support it
- Need funding at state level to coordinate existing programs
- Everyone is disconnected; the biggest GIS programs are at city and county levels
- **May need to establish a fiscal incentive to get the State to give to have-nots**
- Need more money and more staff
- It is hard to interact with citizens and private sector regarding data accuracy

#### Shared Infrastructure

- Locals need hardware, software and data; data they do have may not be accurate
- Need statewide licenses for software
- **Create an enterprise license agreement for rural counties**
- Can WSU host data?
- Can back up local data to WSU systems
- There is a technology divide
- Politicians get in the way of coordination

#### Education

- GIS is growing – people are beginning to understand its importance; it is used in different fields
- Enterprise licenses include online tutorials—like ESRI
- **Need to have coordinated trainings—regional, not at state level**
- Spokane County web interface—everyone can use
- Shift burden of regional trainings, utilize all resources
  - Somebody needs to coordinate
  - DOP does trainings
  - Need to establish one place, where people could find out about trainings that are being offered
  - Need statewide clearing house, list of all training opportunities
- Need to be funding GIS as well as educating about its importance; need to show ROI—how much can be saved by using GIS services
- Need to do outreach and marketing for GIS

#### Partnerships

- **Public/private partnerships are important, need to coordinate with private players** (E.g. Spokane County ortho consortium)
- NAIOP
- Spokane County working with realtors

#### Web Services

- **Web services are useful if they are perceived as dependable**
  - Will support production
  - Use Amazon Cloud capabilities to serve up stable web and map services
- Open source resources are present, but it is hard to provide support

## Spokane Group 3

### A. Report-out

- Need to have a centralized Washington GIS portal/clearinghouse that would contain links to data for different levels, GIO office could be doing this
  - GIO office should be separate from DIS, perhaps located in Governor's office?
  - Needs visibility with governor and legislature
- Currently, there is a digital divide (between urban/rural Washington)
  - Need regional GIS center support; could use universities as geospatial extension agents
  - Could provide centralized servers to share for smaller rural areas
  - Put together an enterprise-level agreement with ESRI for rural counties?
  - Explore open source software?
  - May need to create fiscal incentives to get State to provide resources to rural places
- Need to create one site in Washington (like Idaho, Montana, Oregon)
  - No duplication of data
  - Jurisdictions would work together to update and maintain the data
- Need to focus on public-private partnerships
  - Coordinate with private players
  - Focus on web services
- Education
  - At state level: maybe have someone once a year gather information and post all available GIS training online (or use technology to have people post resources on the web in one location)
  - There should be coordinated trainings across entities and across the state

### B. Full Notes

#### Data sharing

- Data sharing needs: finding, integrating, avoiding duplication
- Technology is there to be directly shared over the net (e.g. services, standards)
  - Public face on published data services
  - Business needs vs. services
- Proposed plans vs. current situation
- Need a service-oriented architecture
- Need a central place to find services
- Need to study best practices, provide recommendations to aid cross jurisdiction integration of data—uniform standards
  - Example: parcels
  - Need help from state on this
  - Attach money as an incentive
  - Need uniformity of data at all levels
  - Following data standards would aid local data development process, save money
- Best practices vs. business needs
- **Develop the key data sets for all counties, the state should help with funding**
- Get information out and help coordinate

- **Outreach**
  - Meetings/regional sessions
  - Conference
  - **Web-ex/R**
  - WAGIC should coordinate this
  - Study best practices

#### **Coordination and Partnerships**

- **Create state GIO/GI Office**
  - Have regional coordinators
  - Should it be in OFM?
- Public/Private partnerships are important
  - AVISTA example
  - Other models?
  - Help from the state?
- **Best practices can:**
  - **Promote data sharing**
  - **Increase efficiency**
  - **Build community**
  - NAIP and Puget Sound LiDAR are good examples
- Also need support from the governor's office and the legislature
- **Locals need to be vocal**
  - Could WAGIC regional groups help?
  - WA TRANS outreach is a good example of coordination
- There should be financial incentives to coordinate
- **Subcommittees should take ownership of framework layers statewide**

#### **Shared Infrastructure**

- Should be centralized
- Public/private partnerships? State? Universities?
- Need to make the case that it saves money and get core mission done better
- Share tips/tricks/software
- Clip and ship at all levels

#### **Impediments**

- IT/security
- In terms of internal/external views – should there be two data sets?
- Institutional practices/traditions?

**TRI-CITIES REGIONAL LISTENING SESSION (NOVEMBER 5, 2009)****Tri-Cities Group 1****A. Report-out**

- Need to have data standards
- Need to have a central location to share data
- Minimum requirements should be mandated through a top down approach: needs mandate to become a priority
- Shared costs: need to determine how much each group should contribute for upkeep and maintenance
- There needs to be education on value of GIS and benefits and what it takes (costs)
  - Education of decision-makers and users – internally to organizations and at state level
  - Education of the public
- It would be good to create GIS advocacy resources for everyone to use (available on WAGIC site?)
- Need a coordinated central location for spatial data; may also need to be from local level

**B. Full Notes****Challenges**

- Funding, share cost as a group, what is available and what is being done in data coordination
- Constraints or impediments:
  - Resources don't exist or we are not aware of them at the state or local level
  - Non-existent standards of data

**Standards of data:**

- By establishing data standards, it would ensure level of accuracy, elimination of duplicate efforts
- There is a variation of the data sources, even for base data
- Data acquisition—would be nice to have a **central location to share data**

**Shared services:**

- Shared services would be useful to post/share data
- There would need to be different levels of access
- **Minimum requirements should be set from top down** (at least minimum mandates for data standards; they should have teeth)
- Web map services
- Need to coordinate within jurisdictions
- Data is specialized by entities, but there are lots of redundancies
- We need to build off the same base map layer, need to define responsibilities and process for updating these layers
- There should be hosting at regional level, at a minimum
- **Shared costs: how much each group should contribute for upkeep and maintenance**
- Example: WA TRANS – value, cost-sharing, coordinated efforts, usable data
  - Costly, have not seen the final product
- **Coordinated central location for data**

## Education

- **Education on value of GIS and benefits and what it takes (costs)**
  - **Decisions makers and users – internally to organizations and at state level**
  - **The public**
- Education – base materials to build from for different levels

## Tri-Cities Group 2

### A. Report-out

- Funding is a challenge
- Need to create awareness of GIS
  - Need to know that the technology is here
  - What it does
  - What are the benefits of GIS
- Movement toward spatial data infrastructure state-wide
  - One-stop shop for data acquisition
  - Should be provided through web services – link to central repository at state level
  - Could also be regionalized
- Data and platform – should be agnostic. Standard open source data – OGC may be the best option.
- GIO should coordinate statewide efforts
  - Educate elected officials at business level
  - Be the keeper of all points of contact
  - Provide data coordination
- GIS education of elected officials when newly in office
- Orthoimagery program
  - Stable budget cycles
  - All getting funded and coordinated and done once
- Framework layers need to be developed and maintained, but need stable funding to accomplish this
- Survey community needs to be engaged

### B. Full Notes

#### Funding (stable) is a challenge

- Staffing
- Development
- Training

#### Awareness—marketing

- Need to have a technology evangelist, GIO
- Need to show ROI and that it is not always money

#### Coordination and data sharing

- Need to determine the points of contact
- Need to update data sharing agreements (fed, state, local)
- **Create web services for users that don't need files.** Data format should be agnostic.

- There is a need for standards
  - Metadata (core)
  - Data model (core)
- **WA TRANS type sharing of data via services for all themes.** WA TRANS is a good example of coordinating and partnership
- Shared services should be at a central node
- State might have the chance of funding to make this happen—needs to be able to support the heavy lifting
- Effective coordination— it will take staff to do this right
- GIO/SIO at government level to coordinate down to local levels
- Grant coordination/funding opportunities
- **State/federal implement NSDI concept**
  - Stats
  - Services
  - Portals viewing
  - Hardware/software to support it
- Benefits to local data sharing and the access to data that's beyond a local's boundaries
- GIS means Get It Surveyed
- **Create an orthoimagery program to simplify local government acquisition of imagery—especially for rural entities**
- Local consortia are important; we don't want to recreate things, but need to make sure that the process is still streamlined
- Via interagency agreements, needs to be a nimble process
- **Framework layers have a potential importance to the local level, but need to be funded in order to reach reality**
- Locals would like one place to share data up to the state level
  - Infrastructure to do it
  - URL
  - Share services and place to host data
- **Need to set up a Washington data one-stop shop**
  - Where.wa.gov
  - Needs to be a coordinated effort
- Link surveys to GIS parcels to ensure accurate information is relayed (scan)
- Make sure data fits together

#### Education

- **Education of executives/management**
  - They need to be educated because they control the purse strings
  - Leverage the assets
- Awareness of GIS importance and impacts on how we do business
- Education of GIS importance to businesses and its application
- Central location on where we can find training opportunities
- Washington State GIS conference: governmental organizations sharing examples on how to solve real problems

## Tri-Cities Group 3

### A. Report-out

- Establish GIO at the state level
  - Should set data standards, be the keeper of all points of contact
  - Should coordinate regional framework server for easy sharing (this will save time on data transfers)
- Education
  - Need to educate upper management about GIS benefits and how GIS works
  - Need to show public benefits for GIS
  - Need to educate and build bridge with land surveyors
- The state needs to diversify in terms of software. There should be training in other spatial software, as not everyone uses ESRI
- Need to create the statewide data repository
  - Should have web portal to access data
  - Should also have regional web portals, supported by WAGIC, for sharing data locally; could be connected to the state web portal
  - The portal should contain archived data
  - The portal should contain framework data
- There should be a rotating regional coordinator (maybe one of WAGIC members), providing coordination on the following:
  - Data sharing/acquisition
  - Outreach
  - Training sessions
- There needs to be support for GPS WSRN
  - Could be used as a standard for Washington
  - Web Mercator is another standard

### B. Full Notes

#### Challenges

- There are no existing standards for data sharing:
  - Naming conventions
  - Projections
- Everyone should have to maintain metadata
- Data sharing agreements are needed – WAGIC should provide support
- There is no GIO
- It takes too long for data acquisition when jurisdictions expand – **need to set up a regional framework server for easy sharing**
- Funding
  - Counties are ok, but need more staff
  - EOC has no direct GIS funding, project based
- There is always need for additional funding, but we have come a long way in proving GIS use
- City management doesn't understand the need for GIS

**Outreach and education**

- Benton County GIS viewers – demonstrating use by each department
- Need to show not just maps, but data too
- Need to show public benefits of GIS
- Get GIS educators out to speak to admin/management. Speaking group/WAGIC should go to city managers conferences, etc.
- **Educate the land surveyors**, build a bridge
- **State needs to diversify trainings – not everyone uses ESRI**
- State classes for other programs
  - Too much ESRI endorsement
  - Solicit others to train

**Data Sharing**

- Locals get data from locals
- Need somewhere to get data about other jurisdictions, but there are problems with proprietary data, etc.
- Sometimes data comes in formats that can't be used – like E911 data
- **There is a need for a statewide data repository**
- **Web portal that supports everyone**
- Get away from proprietary programs
- Regional repositories that feed into statewide repository
- Need more support for WSRN
- **Regional web portal, supported by WAGIC, or giant FTP site**

**Coordination**

- We should be heavy on coordination, low on governance
  - In-fighting between politicians
- **Need a rotating regional coordinator to do the following:**
  - **Coordinate data acquisition (aerial photos, etc)**
  - **Coordinate data sharing**
  - **Coordinate outreach and education**
  - **Coordinate training opportunities**
- **GIO** could help coordinate data sharing and educate others about programs and data formats so agencies know how to talk to each other
- **GPS WSRN is a good standard**
- **Web portal**
  - **Need standards**
  - **Point of contact list – coordinators**
- **Archive data – at state level annually**
- Photos and framework data – roads, buildings, political boundaries, 8 basic federal layers
- State standards for data to be archived that everyone has to adhere to



**ATTACHMENT E**  
**Online Survey Questions**

## Welcome

Thank you for taking the time to fill out the online comment form. The input received from the GIS user community will be used to identify the various GIS needs across the state and inform the Washington State GIS Strategic and Business Plans. The resulting plans will articulate a shared vision and goals, and provide strategies for meeting the needs of GIS stakeholders through collaboration across jurisdictions and organizations.

Please visit <http://wagic.wa.gov/2009GISPlanning/> for updated information on the planning process.

## 1 of 4: Organization Information

\* 1. Which of the following best describes your organization? (Please select one)

State Agency

Special Purpose District

Federal Agency

Utility

Regional Organization

Software Vendor

County

Engineering

City

Real Estate

Tribe

Health Care

Military Organization

Oil/Gas/Mineral

School District

Forestry

Higher Education (College/University)

Other (please specify)

2. Please tell us about yourself (optional)

Name

Organization

Title

Location of

Organization

(city/county)

\* 3. What type of GIS user are you?

1.

Other (please specify)

\* 4. What business uses does your organization use GIS for? (Please select all that apply)

- Planning
- Asset Management
- Resource Management
- Scientific Investigations
- Emergency Response
- Traffic Safety
- Appraisal Records
- Elections
- Law Enforcement
- Other (please specify)

\* 5. How heavily is GIS used by your organization? (Please select one)

- Daily
- Frequently (weekly basis)
- Occasionally (1 or 2 times a month)
- Infrequently (several times per year)

\* 6. How many full-time GIS professionals do you have on staff at your organization?

	Don't Know	None	1	2	3-5	6-10	10<
Manager/Coordinator/Supervisor	<input type="checkbox"/>						
Analyst/Programmer	<input type="checkbox"/>						
Technician	<input type="checkbox"/>						
Database Administrator	<input type="checkbox"/>						

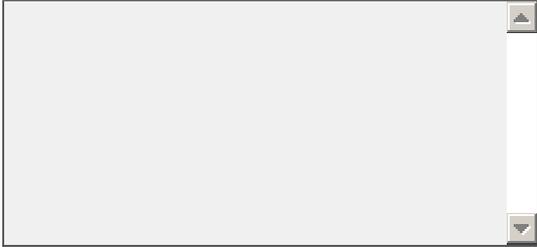
7. Do all of your organization's offices have high-speed, broadband access to the Internet?

- Don't know
- Yes
- No

If no, please specify the % of offices that DO have high-speed internet

## 2 of 4: Priorities and Feedback

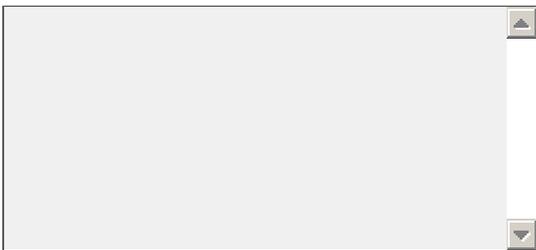
- \* 8. What are the most important Geographic Information Systems (GIS) issues and challenges for your organization? Please explain why.

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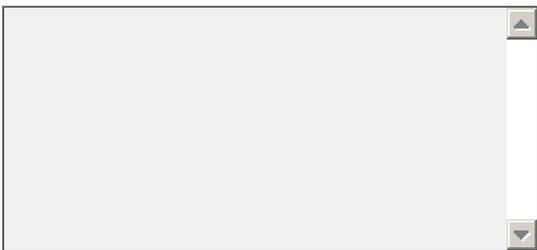
- \* 9. The following five key areas for improving statewide GIS have been identified. Please indicate which of these focus areas are most important for your organization. (Please select all that apply)

- Data, acquisition of data, and data accessibility
- Shared services to provide data and services to customers
- Statewide governance and coordination
- Shared infrastructure (hardware, software, hosting)
- Education around GIS

What could be done to improve them?

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10. What are the major coordinating and partnership opportunities for Washington's geospatial technology?

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11. Please provide any other comments that should be considered in the state's GIS strategic planning project.

A large, empty text input field with a vertical scrollbar on the right side, intended for providing comments.

### 3 of 4: GIS Use and Challenges

12. What are the principal business uses of mapping, location tools and/or GIS within your organization, whether current or planned? Please list the key business questions/activities/programs that use GIS. Please be as specific as possible, for example: "Mapping locations of endangered species populations" + "Providing interactive maps to field crews on laptops"

13. Please rate the level of GIS support and services you currently have for your business functions.

- Excellent
- Adequate
- Some, but need more support
- Do not have any access to GIS

14. Are there any constraints or impediments that you face in obtaining the GIS support and services that you require for your business needs? (Please select all that apply)

- Lack of funding
- Lack of staff expertise
- Lack of access to software
- Lack of access to good/needed data
- Lack of management support
- Inadequate internet bandwidth

## 4 of 4: Shared Services

15. Do you consider your organization to have an "enterprise GIS," system (s) for delivering organization-wide geospatial information and capabilities?

Yes

No

Don't know

If yes, please list enterprise characteristics (i.e. infrastructure, data, applications, etc.)

16. On a scale of 1 through 5, please rate your level of interest in the following enterprise GIS capabilities, if they were available as web services.

	1 Not Interested	2	3 Interested	4	5 Very Interested
Data Download (FTP interface)	<input type="radio"/>				
Geoprocessing	<input type="radio"/>				
Cartographic Services	<input type="radio"/>				
GIS Coordination	<input type="radio"/>				
Geocoding	<input type="radio"/>				
Spatial Metadata	<input type="radio"/>				
Geometry	<input type="radio"/>				

## Thank you!

Your input is a valuable part of the planning process. Thank you for taking the time to comment on GIS in Washington State. If you have any further comments or questions, please visit the website: <http://wagic.wa.gov/2009GISPlanning/> or contact Joy Paulus at [joyP@dis.wa.gov](mailto:joyP@dis.wa.gov).



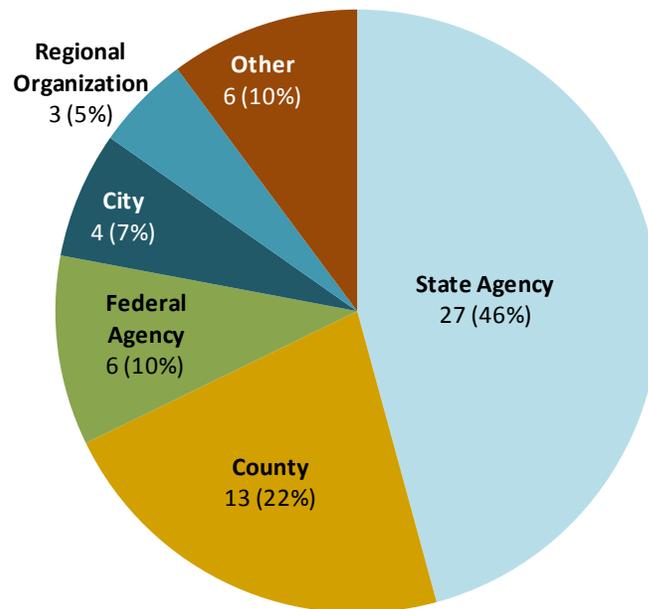
**ATTACHMENT F**  
**Online Survey Responses**

## ATTACHMENT F

### Online Survey Responses

The following survey responses have been categorized according to common themes within each question. Comments are verbatim from the survey, with minor spelling and grammatical errors corrected. Charts were generated from survey responses to quantifiable questions in which the respondent was asked to “Select one” or “Select all that apply.”

#### 1. Which of the following best describes your organization?

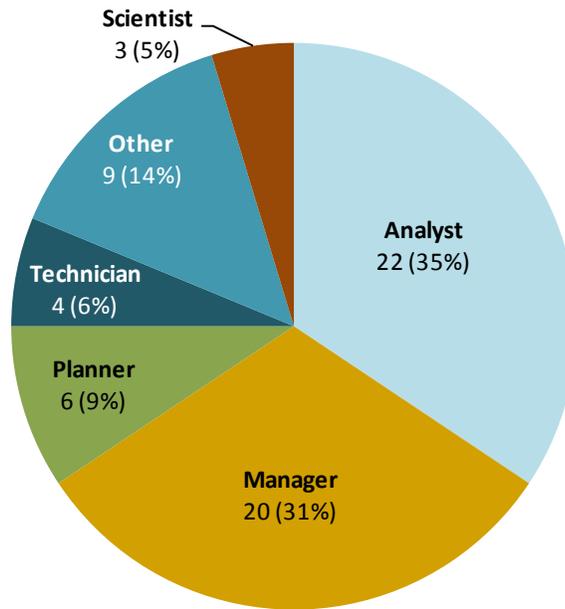


- The “Other” category includes:
  - Tribe
  - Utility
  - Engineering Firm
  - Oil/Gas/Mineral Company

## 2. Please tell us about yourself.

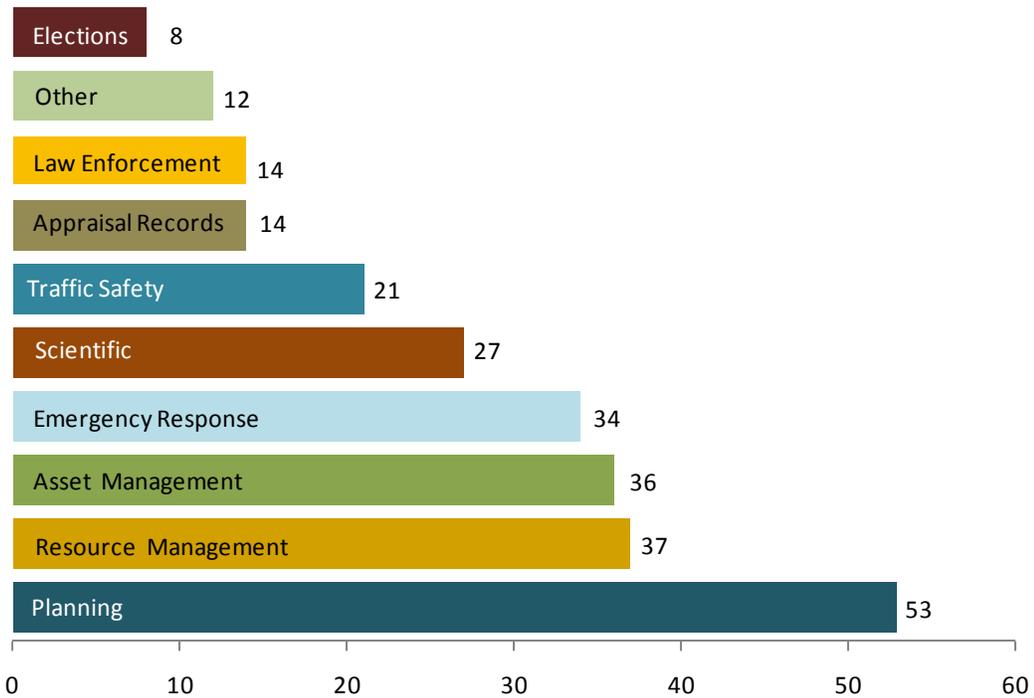
Name	Organization	Title	Location of Organization (city/county)
Allen Cousins	Avista Utilities	Senior GIS Analyst	Spokane/Spokane
Brian Malley	Benton-Franklin COG	Modeling/GIS Specialist	Richland/Benton
Daryn Brown	City of Bothell	GIS Services Lead	Bothell, Snohomish/King (split)
Steve Schunzel	City of Des Moines	GIS Administrator	Des Moines/King Co
David Granata	City of Kennewick	GIS Supervisor	Kennewick, Benton County
Dale Purcell	City of Lynden - Planning	GIS Analyst	City of Lynden
Bob Pool	Clark County	GIS manager	
Starla DeLorey	DeLoreyWorks	GIS Analyst ITS3	Nordland, WA
Ian Mooser	Department of Ecology - Toxics Cleanup	GIS Manager	Lacey, WA
Jane Ely	Dept. of Revenue	Cartographer / GIS Tech.	Olympia, WA
Theresa Julius	Grays Harbor Council of Governments		Aberdeen
Peter Keum	King County Dept of Natural Resources and Parks	GIS Specialist - Senior	Seattle, WA
Tamara Davis	King County DOT, Road Services	GIS Program Manager	Seattle, WA
Diane Mark	Kitsap County	GIS Manager	Port Orchard/ Kitsap County
Larry Watilo	Legislative Service Center (WA St. Legislature)	Business/Finance Administrator	Olympia, WA
Matt Stull	Mason County GIS Department	GIS Coordinator	Shelton, WA
Barbara Seekins	NOAA Fisheries	Geographer / NWR GIS Coordinator	Portland, OR
Bruce Jones	Northwest Indian Fisheries Commission	SSHAP Section Manager	Olympia, Thurston
Melissa Crane	San Juan County	GIS Program Coordinator	Friday Harbor, Washington (San Juan County)
Scott Carte	Thurston Regional Planning Council	GIS Coordinator	Olympia, WA
Scott W. Campbell	U.S. Army Corps of Engineers	Physical Scientist / GIS Specialist	Seattle District
Sean Redar	U.S. Army Corps of Engineers, Walla Walla District	District GIS Coordinator	Walla Walla
Dwaine Schettler	USDA-FSA	Program Specialist	Washington State
Corey Plank	USDI Bureau of Land Management - Oregon State Office	Lead Cartographer	Portland, OR
Chris Snyder	WA DNR	GIS Analyst / Programmer	Olympia, WA
Christina Heimburg	WA DNR	GIS Analyst/Data Steward	Olympia, WA
Eric Aubert	WA DNR	GIS Unit Supervisor	Olympia
Rebecca Niggemann	WA DNR, Forest Resources and Conservation Div.	GIS Analyst	Olympia
Thomas Kimpel	WA OFM	Forecast Analyst	Olympia,WA
Dick Petermann, CP	WA State Department of Natural Resources	Photogrammetrist3	Olympia/Thurston
Mike Woodall	Wa. Dept. of Ecology	GIS Analyst	Lacey/Thurston
Dan Miller	Washington Military Department	GIS Lead	Camp Murray (Pierce)
George Spencer	Washington State Department of Transportation	Geographic Services Manager	Olympia
Allen Jakobitz	Washington State Emergency Management	Science & Technology Planner	Camp Murray/Pierce
Marcia J. Marsh	Washington State Patrol	Law Enforcement Analyst	Olympia, WA
Gordon Kennedy	WSDOT	Information Resources Manager	Olympia/Thurston
Pat Whittaker	WSDOT	HPMS/Functional Class Manager	Olympia/Thurston
John S. Lacy	WSDOT	Survey and Right-of-Way Plans manager	Spokane

3. What type of GIS user are you?



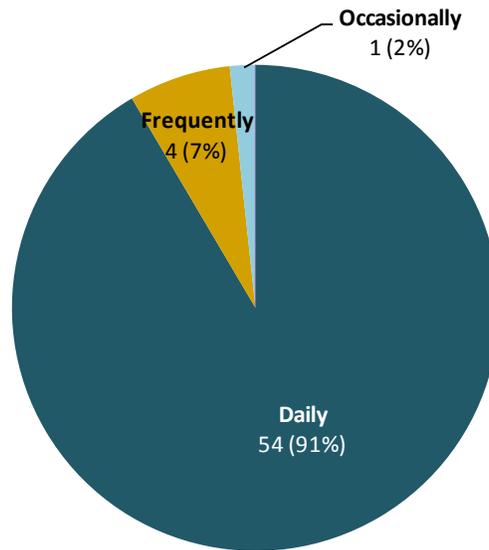
- The “Other” category includes:
  - Database administrators
  - Business users
  - Public application users
  - Software developer

4. What business uses does your organizations use GIS for? (Please select all that apply)

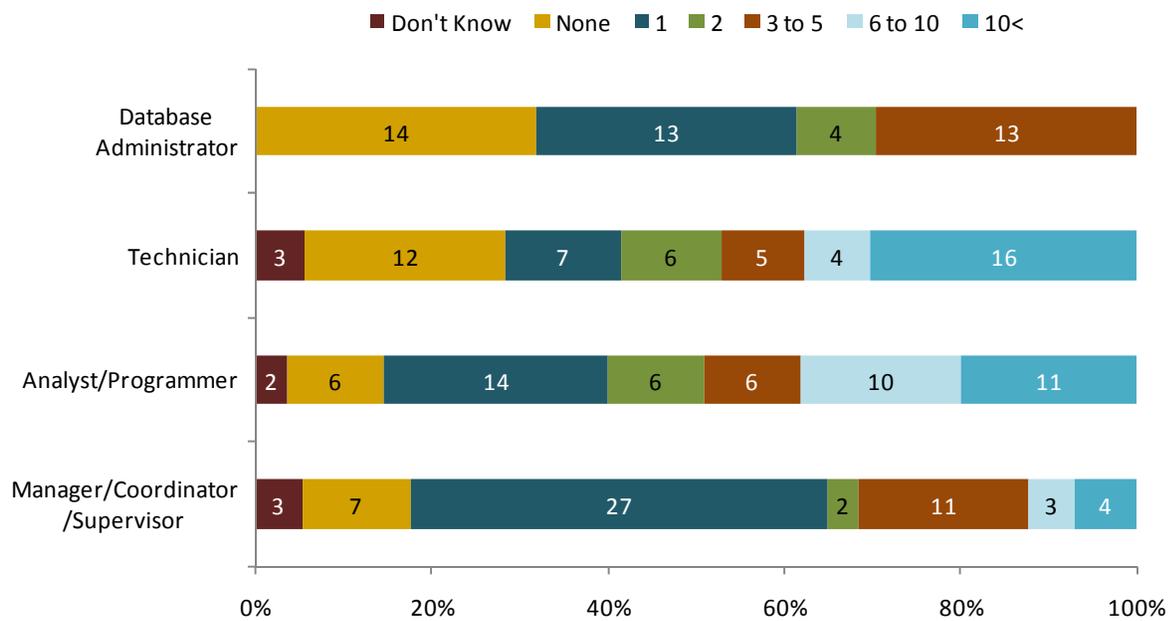


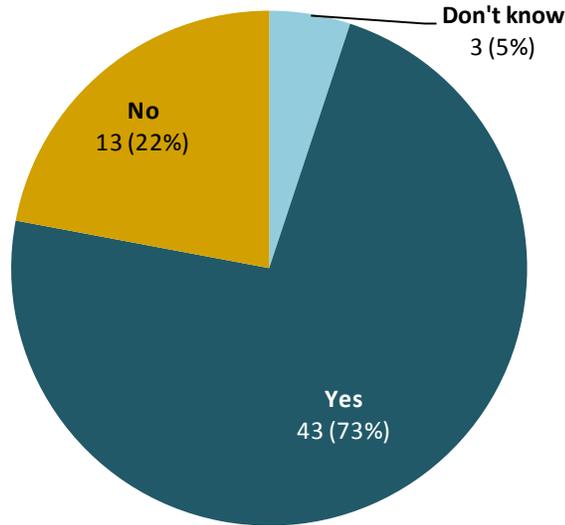
- “Other” included the following uses:
  - Fisheries management
  - Demography
  - Environmental compliance
  - Taxation – sales tax, utility company tax, forest tax, and analysis of legislation
  - Education
  - Tribal issues
  - Address verification
  - Modeling
  - Farm records and crop reporting
  - Geographic Coordinate Database (GCDB)
  - Utility Infrastructure
  - Curiosity

5. How heavily is GIS used by your organization (Please select one)



6. How many full-time GIS professionals do you have on staff at your organization?



**7. Do all of your organization's offices have high-speed, broadband access to the internet?****8. What are the most important Geographic Information Systems (GIS) issues and challenges for your organization? Please explain why.****Coordination**

- GIS Manager
- One issue is the management of Mobility data separate from our GIS. Staff manage a RoadLog data layer and manage data through a separate process which is inefficient. Managing the data in GIS and being able to push the data through an automated process to Mobility would be ideal.
- Integrate the Toxics Cleanup Program GIS goals with the central agency GIS shop at the Department of Ecology. Expand the use of GIS with the Toxics Cleanup program and support our users with GIS use in their daily tasks. Specially, with ArcGIS Explorer, web applications (for our primary information system) and Desktop GIS assistance.
- Setting up an organization-wide system that can be depended on for resource management
- I believe there is a method to help solve a portion of the economic dilemma that faces the State of Washington. It consists of implementing GIS (Geographic Information System) into each WSDOT Region. GIS is presently used by WSDOT Headquarters, concentrated on mainly environmental themes. I believe we could expand the program to include the variety of offices in the engineering and maintenance areas as well. The rationale behind implementing geographic information systems (GIS) is that inventory and management systems overlap in the information needed to maintain them, just as the infrastructure overlaps in its own physical place (for instance, under the sidewalk will lie gas pipelines and electrical lines). GIS allows a manager to recognize and take advantage of these overlapping infrastructures and gain economies of scale by not doing redundant inventories. In the past, lacking this type of guide, many organizations have spent many millions of dollars to get functional systems. The causes of this cost are many. One is that GIS has traditionally been available only to users of top-end computer systems. Another reason is that when GIS was less widely used, information had to be acquired by each user, requiring extensive survey work. As

desktop computer systems rapidly increase their capability, so GIS has increasingly become a desktop program. Hardware has dramatically decreased in cost. For example, color printers have dropped from over \$10,000 a few years ago, to the present cost of several hundred dollars. Increasingly, GIS software has become easier to use, less expensive, and the information needed is also increasingly available from a variety of sources. The most important decisions we will face in pursuing a GIS will be the level of financial commitment. We must assure there is an appropriate return on our investment, and provide benefits that outweigh the costs. One of the problems we have had in implementing GIS in the WSDOT Eastern Region is convincing organization managers that the cost of changing over will be vastly outweighed by the future cost savings of the program. In 2004, we identified many uses for GIS in our Region. There were a total of 15 meetings with the Project Engineer Offices and support offices over a 3 month period. The discussions included brainstorming sessions, concentrating on how GIS could be used in each office, assisting in project delivery, and reducing time spent on specific processes. The following offices found advantages of using GIS: Project Engineer Offices, Utilities, Materials Laboratory, Planning, Design/Plans, Real Estate Services, Traffic, Environmental, Project Control, Maintenance and Facilities, and Local Programs. Since the details of our findings in each office are too lengthy to place in this suggestion, I offer additional information to any interested parties that are truly interested in helping the State of Washington invest wisely into the future. We have an economic crisis to face, and I believe that this challenge is falling at the perfect time to make change. I also believe that the surveying community has an opportunity to encourage this effort now, and support our HQ GIS staff as much as possible. A prime example of this plan is the E.R. Monument Database that was demonstrated at our last State Survey Committee meeting

### **Data Maintenance and Documentation**

- Data storage and transfer capacity
- Creating/maintaining metadata
- Data stewardship (making sure layers are updated/documented consistently).
- Data storage is costly for continual access. Data stewardship is difficult to keep up with.
- Lack of data documentation! there is so much data out there, but no documentation on how it was created and at times this can become important when trying to do fish / culvert work. I used to work for a consulting engineering firm and obtained data from all over for our projects and just about all of it would be hard to defend in court.
- Developing accurate, current web-based applications for Internal and External Customers. Our internal customers vary greatly for a relatively small GIS staff, without much programming background. Ensuring that we have the most current information to response to natural and man-made disasters, for both civilian and military responses. As the state's primary Emergency Management organization and as the Military assets for the Governor's use, we need current base data, imagery and updated contacts from multiple agencies that provide geospatial information.

### **Data Standards and Sharing**

- Data - legacy databases data values are not holding up to the new use demanded by GIS. Data cleansing, normalization, and standardization have not been existing and now need to be implemented.

- Where is the data? Our business operates in three states and within numerous government boundaries. There are many entities with GIS data of different quality levels, in many formats, and just as many entities without GIS that are unable to provide their data.
- Citizens' access to data via the County's Internet (replacing an old site with an easier to maintain, and more intuitive one for the citizen)
- Coordination of data and ideas among departments within the County
- Working with multiple jurisdictions' data. What may be available from one jurisdiction, may not be from another. Attribute fields not matching from one jurisdiction to the next. Burdensome data request procedures with some jurisdictions.
- Staying on top of all of the requests for data & analyses
- Data-mining to meet needs for specific projects.
- Metadata and Standards: Much of my work has required compiling and standardizing GIS and tabular data from multiple sources. Often this data had no metadata.
- We don't want to duplicate what already exists so we need to know what has been created; then, we expect that there will be contractual arrangement already in place that will make it easy for the Legislature to subscribe to services. We expect that the data would be relatively fresh. For any particular topic/subject matter, we would want to know who the recognized knowledge authority would be.
- Sharing information and metadata with federal, state and local partners to support regional transportation planning. WSDOT uses data from multiple agencies under data sharing agreements that preclude redistribution of the data. Results in duplication on infrastructure, data sharing agreements, unsynchronized data and/or lack of data.
- Lack of commonly used, recognized "official" authoritative versions of data that are shared and updated on a regular basis.
- Lack of governance to manage change related to data, metadata, infrastructure and standards.
- Improved communication across a large agency where GIS is distributed
- Lack of integration of CAD (Microstation) and GIS.
- Increasing the quality of data sets
- Making data available to the public
- As a regional entity, our biggest challenge is effectively and efficiently collecting data from the variety of source/agencies/entities that encompass our region. Any county-wide analysis we wish to perform requires collecting data from between three and 10 different entities.
- Data availability from local governments. The patchwork of basic GIS data available on a local level and the ability to get it quickly and cheaply. Each County has different rules for data dissemination and some don't seem to follow FOIA laws regarding acceptable charges for their data.
- Better Data coordination and access from other cities and counties.
- Collaboration from varied locations. Real-time situational awareness is critical and it would work better if data was NOT interpreted, but was rather provided by those closest to the data.

### Data Acquisition

- Data acquisition: Previously most of the data I acquired from asking contacts in my network. On my current project I am overwhelmed with the amount of data available but have difficulty assessing its quality.
- Obtaining statewide data that is accurate and current. At the top of the list is the parcel layer with full database, and also city boundary information. Another challenge is managing our time and efforts so that all legislated mandates are completed on time.

### Funding and Resources

- We have limited funds and limited experience in the area of GIS historically. GIS mapping is currently confined to analysts, and our agency does not have a dedicated GIS unit. Knowledge of what GIS is, is limited both in our IT department and HR. We are also dependent on other agencies for layers, etc. (i.e. WSDOT, OFM, etc.)
- Modernization
- Funding. County GIS systems provide countywide services but receive unincorporated property taxes. Schools, Ports, Libraries, Universities, Cities, Utilities all benefit from the central GIS library.
- Funding for development, maintenance, and operation of framework data layers
- Lack of GIS Professionals
- Funding. We are a small organization, costs of maintaining software licenses and upgrades are cost prohibitive.
- Fragmented resources (people, hardware, software), lack of focus/direction, lack of recognition/understanding of the true value of GIS.
- FUNDING
- Funding. Our part of the agency works for the state trusts, not the public. We need to make sure that anything we do and invest in financially benefits the trusts.
- Finding sufficient funding to allow us to purchase datasets (eg. Orthophoto partnerships) or collect data
- Finding sufficient funding to do different GIS-related projects
- Finding sufficient funding for training personnel - loss of GIS and its support positions
- Business Application Integration Basic Data Maintenance - just keeping up GIS staff resources barely can meet demands of City; high development activity equates to high amount of GIS maintenance.
- We need capability to map information on local agency roads
- Ability to identify land ownership, so we can ensure program benefits are being distributed to the rightful landowner or land user.

## Technology

- Implementing enterprise (server-side) GIS. Everyone agrees that EGIS it is strategically important but implementation has not been a high priority item within the IS department (funding/staff allocation/ownership issues). We are optimistic that this problem will be resolved soon.
- Need to become business driven rather than technology driven. In many agencies GIS is driven by ESRI technology. ESRI is a good technology, but it has its own weaknesses and there are many other options. There are lots of open source projects as well that is completely customizable and can be implemented without licensing concerns. We need to adopt the best technology for a business. Sometime it is not ESRI.
- Integration of GIS from the boutique into the mainstream of IT.
- Keeping PCs upgraded to keep pace with changes in software requirements
- Getting older legacy systems converted over to a completely enterprise environment
- Lack of communication between IT and the business of our agency. There has been a lot of time spent on projects in IT that aren't necessarily needed by the business end of our agency. There has been no needs assessment, so no one has any idea of what is needed to make things better.
- Fast, high resolution imagery that can be used in an enterprise GIS system.
- As a non-GIS professional, I would like the state to put a lot more effort into making GIS information available in formats that are usable in consumer mapping applications like Google Earth and Bing Maps, e.g., KML and GeoRSS. In fact, doing so should be mandatory. There is more to the GIS world than GIS professionals sharing SHP files with other GIS professionals. Open up the data to everybody!

## Education

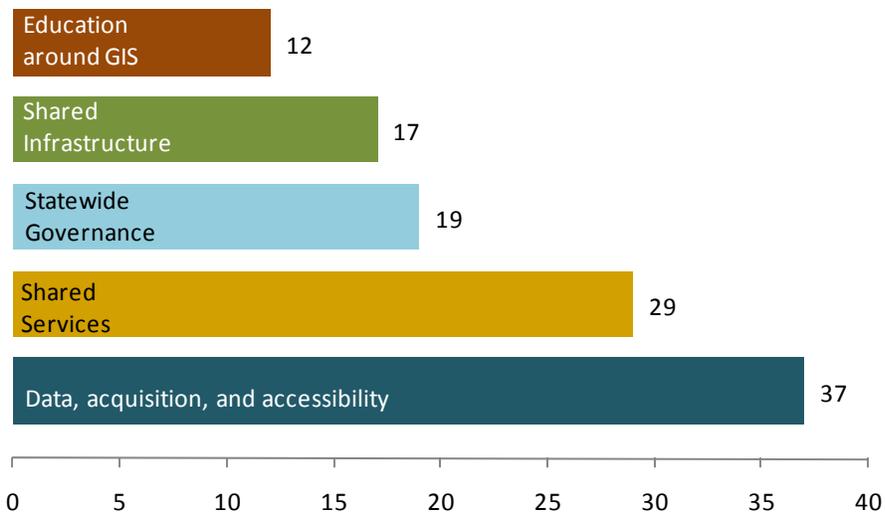
- Maintaining focus on mission. Staffing. Executives unaware of key technologies required to succeed in the 21st century.
- Keeping training/knowledge current w/ non-existent training budget
- Education (learning ways to make day-to-day processing faster with consistent results).
- Educating management & staff about GIS capabilities, complexities, and need for more resources. They don't understand it and are focused on other issues.
- Continuing education. Keeping updated. Looking beyond the project to see what other people are doing.
- Getting everyone on the "same page" with education and decision making.
- Education (making sure that users know what data is available and where it can be found). Also the other huge component of this is making sure that users know how to use the data (technical GIS skills as well as understanding of limitations of use).
- Getting staff/managers to understand the usefulness/value of GIS and to understand "thinking spatially".

- Our GIS program is only three years old. As a result, some departments buy into GIS, some are not at all interested, and others are somewhere in between. Additionally, we are going through budget woes as are many other organizations. We are still trying to educate managers and staff about the benefits of GIS and the importance of maintaining GIS data. Due to the budget woes and to some extent, the lack of buy in, GIS is primarily funded by two Counties departments. This leaves other departments with minimal GIS support and essential data that is not maintained.
- Stupidity of our managers is the biggest challenge

9. The following five key areas for improving statewide GIS have been identified. Please indicate which of these focus areas are most important for your organization. (Please select all that apply)

Five Key Areas:

- Data, acquisition of data, and data accessibility
- Shared services to provide data and services to customers
- Statewide governance and coordination
- Shared infrastructure (hardware, software, hosting)
- Education around GIS



What could be done to improve them?

Coordination

- For Statewide coordination: the State could do some research find out the institutions and personnel in charge of GIS divisions & departments. Provide \$ to the small counties and cities that cannot afford GIS hardware, software & personnel.
- It would be great to have a state (national) standard for all GIS base data (i.e. roads, hydrographic, parcels, etc). The entity should also set the data standards (i.e. database model and accuracy level). The responsible entity should be responsible to provide the infrastructure to support this base set of GIS data (i.e. servers and services for hosting and maintaining the data). All this data should be freely accessible by the public.

- Seems like there is a huge opportunity to collaborate across agencies with respect to implementing public facing server-side GIS. Everyone seems to be hitting the same brick walls and having to reinvent the wheel so to speak.
- 1) A full time state GIS office to help coordinate state wide data access; limited stewardship of high use datasets; and help coordinate the discussion of future data acquisition, standards, shared infrastructure, and educational programs. Staff could develop an online catalog of metadata covering Washington state, and serve up high use data. Public, private, and nonprofit could log on and list their data, identifying content, contact information, and download location (if applicable). GIS users could then comment and add information to these entry's. Staff could also offer services limited to helping GIS users acquire data. Staff could organize educational events/materials/media for both GIS users and laymen, addressing best practices, current technology, and current uses. 2) A State GIS shop that provided cartography and database creation, and analysis services could be created as well for contract work. This should be separate staff, so not to overburden the state GIS office. This should not be a replacement for agency GIS shops/staff. The shop could support itself and help support promotional media and educational opportunities.
- The State needs someone on point to lead statewide-GIS development (a GIO). Then, a clear vision of what future statewide GIS should look like; buy-in by everyone, including the Legislature, is critical to sustainability. As goals are defined, agency roles as "authorities" should also become apparant; ownership of those responsibilities is critical and TRUST within the GIS community that there will be struggles but progress can be achieved if everyone sticks together. Areas that need resolved quickly include: security, data management, cost-sharing model, overall statewide GIS administration. More...?
- Create the governance body
- Split governance and coordination.
- Create a coordination body, an organization with dedicated resources to facilitate shared infrastructure, data, and services.
- Major state agencies should be mandated to have a GIS Manager (Chief Information Officer) on staff.
- Continue providing assistance with the coordination in acquiring data such as orthophotos, parcels, and LIDAR data for Washington State. These are very important data layers for the Toxics Cleanup program. Explore new methods of outreach and social networking tools(twitter/facebook/blogs/rss feeds) to keep in touch with users.
- Statewide stewards, standards, and availability sharing.

### **Shared Infrastructure and Data**

- Make shared infrastructure such as hosting and data accessible and affordable to State Agencies.
- No shared initiative will be accorded any level of priority without a State mandate. There are too many other priorities and too little staff time to work on low priority "nice to do" projects even that there will be a benefit to be achieved.
- Continue with efforts such as WA-Trans. Ensure that WSDOT is providing their data from TDO, as well as other departments for inclusion in WA-Trans provided data. Additionally, sharing of the WSDOT workbench with Regional Planning Organizations would be a step in the right direction.

- WA as a state has more hoops through which one has to jump in order to get data (signing data agreements, purchasing data). Write the metadata and make it all accessible via the web.
- Data should be available in the OGC approved standard compliant format such as GML and WMS not proprietary format such as SDE.
- Aerial photography program. Central repository for data. I get really tired of providing data to many individuals instead of a single state agency. What is the plan for small poor Counties who can't afford GIS? how will you fund this? Perhaps coordinated hardware/staffing would help. Charging them is not going to work. GIS is NOT a revenue generator
- Make the data projects a priority. Provide funding. Make them accessible.
- Define the architecture (as in how to design and provide shared services.) Provide the infrastructure and support resources.
- Enable shared infrastructure more through funding and staffing
- It would be beneficial to have a well known location for data services. Perhaps a website with data services and perhaps a developer page for those services. Popular data such as traffic cameras, traffic incidents, real-time snow plowing, etc.
- It would be wonderful to provide some of the smaller county Assessor's Offices with GIS support - both staff education and work. The creation of a county parcel layer along with data correction and data entry is important to the Assessor and also to the WA Dept. of Revenue. The staff at the county level has faced cutbacks this year as a result of the current economic crisis, so parcel layer creation and maintenance will fall behind (I fear).
- Continued work to facilitate shared GIS data and standards - keeping in mind the budgetary limitations of the smaller jurisdictions in our state.
- There should be a single (easy to use and good looking) GIS data portal for the state of Washington. I am not talking some "map services", "layer packages", or whatever. If that stuff is included - great, but remember: it is only fluff. I think a great product/service would be a single webpage/FTP that would be similar to all the large state agency GIS data download webpages (<http://fortress.wa.gov/dnr/app1/dataweb/dmmatrix.html> or <http://www.ecy.wa.gov/services/gis/data/data.htm>) - but bigger!!! There should be an easy straightforward way to download the data, metadata, symbology, etc. Also very necessary: a high bandwidth FTP site where we could point scripts to AUTOMATE downloads . If other agencies (not just Govt.) want to post data, then they should be allowed to do so... The more the better, but make sure it is well organized! "Seeing" data through map services, IMS, etc. are great, but some people (me) want to actually use this stuff for real analysis, and that does not seem possible via the current technology that simply serves an image but not the coordinate geometry (which is necessary for things like buffering, clipping, etc.). No, I don't want my buffers in some ArcServer thing while I wait for the server to "queue" my request so I can see some intangible graphic in my web browser - I want it buffered in my ArcMap session by my local processor so I can then actually use it with all my other local data.
- Updated and more comprehensive environmental data that assist with shoreline and critical area management.

- The on-going effort to share geospatial data via a web portal is a good start in allowing those that need to the data to have ready access when needed. Ensuring that the quality of the data and the documentation (metadata) is also very important.
- post quarterly updates to key data sets on the internet. post metadata. Make sure the standards (coord sys etc) is out "front".
- Clear stewards for each dataset and access to those datasets.
- Make data exportable in easy to use formats like KML and GeoRSS. Facilitate mashups and ingenuity by public users. Stop giving users ARCSDE "layer cake." Upgrade state GIS mapping applications to modern platforms that provide ease of use and acceptable performance levels. Design state web mapping applications to facilitate user-contributed error corrections.

### Education

- Recognition of GIS by IT leadership. Coordinated management of GIS as a specialty within the framework of IT rather than treatment of GIS as something special unto itself.
- For Education around GIS: work with local user groups & state chapters of URISA, ASPRS, etc.
- Education: Regional GIS forums each quarter where people demonstrate how they use GIS; Data: Post road data by county, municipality, state (DOT) -- useful for more accurate geocoding and emergency response
- Provide for advanced training to supplement agency provided basic training. Publish best practices, success stories, coordination opportunities."
- Tell me about them, and how to integrate with them
- Hold seminars and training sessions for the decision makers (City/County administrators, commissioners/council, legislators, etc.) that focus on improving efficiency with GIS in these tough economic times. I know in our organization, there is loads of opportunities to improve workflow and increase efficiency with GIS. Other ideas include press release, newsletters, user's groups, etc.

### Other

- Get more people
- All are critical pieces of the big picture. Top level decisions have to be made to move ahead with solid funding or it will all be no better that what currently exists (small pieces that make a big picture but were FORCED together like a puzzle and lacks the value it could have).
- None of the above! How were these areas identified? We need stability and flexibility to do our jobs without being encumbered by a large state-wide GIS.
- funding from the legislature and a directive from the governor

**10. What are the major coordinating and partnership opportunities for Washington's geospatial technology?**

- WSP is currently looking to partner with WSDOT to provide GIS maps of traffic and crime related data, along with 9-11 incidents to Troopers statewide. Additionally, a grant from BJA/NHTSA/NIJ for "Data-Driven Approaches to Crime and Traffic Safety" will cause us to further explore linkage between GIS with the Statewide Fusion Center and Traffic Collisions/Trooper Stop information. This could also potentially be expanded to include emergency response and planning partners. Through the use of GIS, we are saving lives, reducing crime, and preventing terrorism on our state roadways.
- Most local governments want to share, but lack leadership & initiative from the State.
- Regional base map layers. Regional aerial photography coverages. Regional data sharing potentials
- It's hoped that the private sector is considered in partnership opportunities. There are many businesses (i.e. Electric and Gas Utilities, Water Districts, Telecom, Cable Networks, etc.) that maintain GIS dataset.
- WAGIC, ISB-GIT, Shared Geospatial Services Workgroup.
- Code exchanges among GIS developers and technicians. GIS technicians usually work in small groups within various agencies without much communication with others. They daily reinvent the wheels. e.g. Basic GIS tools such as XY to/from address or mile posts can be shared. If not the whole tool, code can be shared. Easy and convenient ways to share GIS tools, code, and best practices will help move this forward. It can be a website similar to SourceForge or GoogleCode.
- Direct inter-agency data services among data stewards. Direct geo-spatial services available from authoritative agencies: for example, a State Route milepost locator tool in a publically published web service.
- Public, private, nonprofit, academic, and the citizen. Provide the infrastructure to connect and sort to the relevant data. Educate the populous about GIS capabilities, your tools, and organization. Encourage the government sector to participate. Provide the coordination and stewardship to identify and maintain the key data that is the most utilized and needed. This key data will identify the major coordination and partnership opportunities.
- WaTrans Framework
- Dept. of Revenue in the past has contributed to purchase of the NAIP imagery, but I don't believe had the budget to contribute to purchase this year. This imagery is especially helpful to Forest Tax, and also other divisions. I am concerned that we do not have the latest NAIP imagery, if it could be provided for all state agencies it would be fantastic.
- I would only mention the need to think vertical when considering GIS opportunities. Include federal and local GIS efforts in a statewide model and make their inclusion mutually beneficial. Keep the eye on the target, which should make GIS development efforts more Public centric.
- Aerial Photography At the local level we do not care about state level datasets. The state cares about getting local data. Coordinating a single statewide database, and not charging the local governments to provide the updates. Funding local governments so that they can provide current accurate data.
- Orthoimagery acquisition. State agencies are better organized but federal and local led efforts typically do their own thing. There is a mixed report card on Federal coordination.

- Framework layers: WA-Trans, Hydro, Elevation, Cadastral, Geo-referenced imagery.
- Parcel database development, maintenance and operation.
- Develop a public accessible spatial data viewing web site that is capable of providing a customized interface based on an agency's need. Promotes more public participation in decision processes.
- Create a central repository of local government comprehensive plans (and why not state agency plans?).
- Create a railroad layer (or incorporate into WA-Trans).
- Create data and tools for climate change analysis.
- Adopting national standards for highly sought after data (e.g. traffic incident data). King County is already consuming WSDOT traffic incident data through a web service and displaying that data along with King County traffic incident data. I would like to push for all jurisdictions to adopt a traffic incident standard for easy data sharing.
- Using state-wide resources to facilitate the development and advancement of GIS in smaller communities.
- WAGIC, OEM, DOT
- Easy dataware for public/agencies to download and view data via web technology.
- Data repository and data distribution. I think DIS has done a great job to centralize the ortho imagery. But other things (like vector data) really need to be stored locally to do meaningful analysis/geoprocessing (streaming coordinates via the internet is still too slow and not yet practical for layers like roads and streams - not yet at least!).
- Shared geospatial (cartographic and Geoprocessing) services. Identify and promote/support a common application that can be used by all in order to use the shared geospatial services. Develop a geospatial services "portal" where shared services could be found/accessed. Develop coordination of GIS training opportunities.
- E911 and GIS is a key opportunity for shared development. Currently most E911 systems are disconnected from the GIS side of the house. This results in duplication of effort since we buy a basemap for the E911 computer assisted dispatch system and a different one for GIS mapping.
- Shared cached map services (similar to base maps provided by Google or Bing) and hosting. Map services and geoprocessing services would be accessible by multiple interfaces to web applications, ArcGIS Explorer, and ArcMap. Share code between agencies for ArcGIS Explorer customization.
- Coordination at all levels of government and private sector.
- National Agricultural Imagery Program. FSA through our Aerial Photography Field Offices captures 1 meter full color ortho-rectified imagery on a 3 year cycle. Partnerships with state and local governments insures imagery for the entire State and not just the lands associated with farming.
- Participation in WAGIC, coordination within industries and like government agencies for data compliance and standards. Conferences are great, but there needs to be an effort to meet more frequently to achieve realistic goals.
- LiDAR acquisition and sharing of derived products. Standards are very important so that resources go to one product that satisfies the greatest amount of need.

- Continued orthophoto collection, coordination of hydro project with NHD, coordination of the creation of more geoprocessing services for use in web mapping applications developed by state agencies.
- Centralized data download site, common coordinate system
- Identifying data sources at all private, local, state, Indian, or federal organizations. Having a central location from which to link to anyone's data
- Make state coverage available at zero cost to commercial mapping vendors. Get parcel coverage for all counties.

**11. Please provide any other comments that should be considered in the state's GIS strategic planning project.**

**Coordination and Governance**

- In order for coordination to occur, there needs to be one point of direction - a GIO. In order to gain cooperation there needs to be a State driven mandate, funded if possible, to make a priority to a coordinated project. Otherwise, this is only a nice to do project that no one has any time to support. A State-wide coordinated GIS sharing effort can save lots of public money.
- Basically I support a stronger WAGIC. Both the public and the GIS users need to be educated about GIS in general and WAGIC. This survey has inspired me to learn more about WAGIC and the GIS Clearing House. My knowledge of the GIS world beyond my project is woefully incomplete.
- Streamline the already mass of committees and redundancy. Then, give the remaining organizing bodies some teeth. Also, the budget process needs a modified budget model. Regardless of the state of the economy, the Legislature needs to be able to review all the requests submitted by agencies. Now, the Legislature is most often omitted from the process to consider requests because an early step in the budget-development cycle removes a request for consideration. Like other IT projects, funding for GIS projects needs the ability to span biennia; although, GIS projects should be required to be completed in phases, too.
- Consider legislation to establish a state GIS function.
- State agencies should consider contributing resources to form a central office to coordinate GIS activities including framework data development efforts, spatial services, standards, and tools. External governance is needed to prioritize activities.
- State agencies should consider coordinated budget requests for foundational activities.
- The state's IT department needs to start to get involved in GIS. It should be the focal point for state wide GIS efforts.
- We need central guidance and project control to reduce duplication and increase sharing.

**Data Sharing and Standards**

- At a minimal, identify a list of datasets government agencies should be maintaining and develop and publish a standard data model for each of these datasets.
- Improve the state geospatial data clearing house

- Evaluate “cloud” resources as an affordable option to centralizing infrastructure."
- Have a GIS Data Framework (data schema) that works for both Rural and Urban needs. If that proves too complex have a framework for each separate
- More use of WMS and open source technology to bring down the cost and development cost.
- Map products with up to date air photos are one of the most requested products. Access, free or very cheap, to regularly updated air photos for Grays Harbor would be welcomed.
- Vision of key shared services accross the enterprise. Development of a Washington Map hosting 'base map' layers used by all agencies. Agency specific data should be maintained by the responsible agency, but made accessible via map services.

### **Education and Outreach**

- Need best practices guide from DIS related to implementing public facing server-side GIS. Should address architecture, shared services approach, security models.
- After a long period of seeking recognition and acceptance for GIS, the wider use and better use of geographic principles is now hindered by GIS continuing to be marketed by its advocates as a boutique technology separate from conventional IT. Both IT management and GIS advocates should understand that the full value of GIS can only be advanced now by incorporating GIS into the heart of IT. We don't need more "GIS professionals," we need more geographers. They will set expectations for how info technologies need to perform as a full range of technical services, not as a button on their screen labeled "GIS."
- Elective and appointed officials need to be briefed (educated) on the importance of good, current geospatial information. Their support can often be a key factor in the success of a collaborative GIS Program.

### **Staff and Resources**

- We also need to hire more IT savvy GIS technicians. Many GIS technicians come from geography/geology backgrounds. We need those type of people, but as GIS is becoming more main stream IT, we need more IT engineer type GIS technicians to manage GIS infrastructure and develop custom tools/software.
- Private participation is very important but difficult to get since products are in the public domain. Standards keep available products on a known and consistent quality level.
- A state-level Enterprise License Agreement or Master Purchasing Agreement with the main GIS software providers would also save agencies with tight budgets

## The Plan

- This planning effort should build on the previous plan while considering new capabilities and new needs.
  - Define the scope and intent of the plan.
  - Establish strategies and goals that are attainable. Define deliverables and timeframes
  - Define the time frame for the plan and the update cycle for example 2 or 5 year
  - Establish accountability mechanisms such as GMAP
  - Publicize the plan
- Don't forget about the little guys...
- Don't get carried away... Do small things first - like a centralized data repository, before tackling other bigger things that have questionable ROI. It's far better to initially do a few small things well than to do one big thing poorly. Don't embark on any "framework" projects - they will always end in disaster because after a time people won't be satisfied with what your "standard" is, and they will break away and do their own thing to satisfy their own needs. This has been repeated so many times it should be considered a law of nature! Heck, my agency can't even maintain a single consistent agency-wide trans or hydro layer! Provide broadly useful, meaningful, and coordinated products (like an official pre-assembled statewide parcel layer - like what Luke Rogers @ UW put together). Remember the users! If you don't meet their needs (make things more complicated, less reliable, ivory towers that aren't used/maintained, etc.) you have failed and wasted a lot of money in the process. Consult with and listen to users more than than you do managers. Users know exactly what they need, managers often do not.
- Problem/Issue Currently the geospatial tools of Photogrammetric technology, recognized critical tools used for the management of the Washington's natural resources, are in jeopardy due primarily to lack of funding. Unfortunately these tools, though shared with the ongoing work of multiple agencies, are funded by only one Natural Resource agency. The intent of the following Reform Idea is to Consolidate and Collaborate Geospatial Science Technology Resources critical for the management of Washington's natural resource so that funding is shared by all agencies that benefit from their direct or indirect use. Washington's Natural Resource and Transportation agencies were early adopters and leaders in the use of Photogrammetric (remote sensing geospatial tools) technology, Engineering Surveying technology, and Geographic Information System (GIS) technology. GIS technology is currently used by Washington State agencies to analyze and manage geospatial-data (images and information) about the location and characteristics of Washington's natural and human built environment. This information is used to manage natural resources, protect Washington's environment, and to ensure public safety. It is little known that most of the geospatial data utilized by GIS technology comes from the inventory, capture and map information provided through the use of Photogrammetric and Engineering Surveying technologies. Unlike many other states, Washington State has developed a business-driven, decentralized approach to deployment of Geospatial Data and Services. Most problematic is the lack of dedicated funding for the acquisition and use of services for geospatial data derived from these science technology resources. In the past single agencies (DNR, WDFW, Ecology, Agriculture) have been able to provide the technical staffing expertise and programs necessary to meet their specific mandates. However, over time with the introduction of new geospatial technology tools, single agencies have become the "go-to-source"

for some common geospatial data sets (such as ortho-photo images, transportation data, hydrographic data). Unfortunately during meager economic times, single agencies alone can not continue to support the geospatial science technologies necessary to maintain the data sets which are vital to all natural resource agencies. Opportunity exists to develop common Funding Model based on data steward agencies that will serve all agencies well into the future. In addition, over time the decentralized approach that has served agencies well has led to substantial duplication of effort. More problematic is the fact that the natural resource agencies each have different GIS data sets and are making regulatory and resource-restoration decisions on differing versions of what should be a common set of geospatial data. Natural resources agencies are also duplicating effort to host GIS hardware and software resources. Opportunities exists to develop a common set of shared GIS data, services, and map products that would be used by all agencies, the regulated community, and the public, through the use of a shared data steward model. Established Data Steward Agencies would coordinate and maintain common geospatial data sets and provide common geospatial framework infrastructure in the form of those data sets for hosting shared services and applications.

- Conduct a needs assessment from an extremely wide view. We need to figure out who the users/audience is before we decide where the state's GIS should be going. Are the users other GIS people? The public? Who is this strategic plan for?
- Please read: Robinson, David G., Yu, Harlan, Zeller, William P. and Felten, Edward W., Government Data and the Invisible Hand (2009). Yale Journal of Law & Technology, Vol. 11, p. 160, 2009. Available at SSRN: <http://ssrn.com/abstract=1138083>

**12. What are the principal business uses of mapping, location tools and/or GIS within your organization, whether current or planned? Please list the key business questions/activities/programs that use GIS. Please be as specific as possible, for example: "Mapping locations of endangered species populations" + "Providing interactive maps to field crews on laptops"**

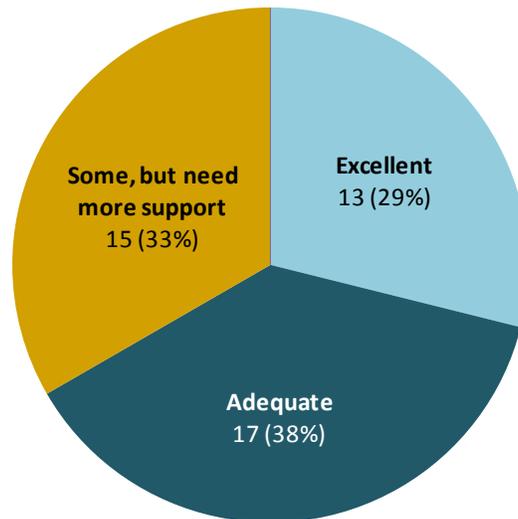
- WSP Field Operations Bureau uses the following maps: Mapping locations of DUI collisions, citizen 9-11 reports of drunk drivers, liquor establishment locations and trooper stops by day of week and time of day + mapping of speed-related collision locations, speed monitoring sites from WSDOT + mapping of areas where seatbelt use vs. non seatbelt use fatal collisions occurred + mapping of blocking incidents lasting 90 minutes or over in high congestion areas + mapping of traffic stops with detail on what else was found in the stop (narcotics, weapons, etc.) + mapping of motorcycle collisions, 9-11 citizen reports of aggressively driven motorcycles + locations of law enforcement involved collisions + maps used for emphasis patrols + maps used for problem identification, deployment, and enforcement assessment + demographic studies with growth projections, traffic flow, crime + animated maps of all of the above showing movement of, for example, DUI collisions over time and day of week
- We provide services to nearly every department in the County. Planning & Building; Transportation - Engineering, Survey & Design; Stormwater Utility; Elections; Sherriff's; Addressing; Assessor; County Commissioners; Emergency Management & Solid Waste
- Support decision making with information. Integration of the organization's data assets. Providing data internally and to the public. Supporting public safety.

- All of our facility or asset data is managed using GIS. This data is used throughout and at all levels of the business. Some examples of how the GIS data is used include: managing asset location and attribute information, construction design using GIS, Electric outage location and extent, providing up to date electronic asset maps to field crews and contractors, market analysis, risk assessment, and etc.
- Creating plat maps used by Assessors to create lots/parcels; COGO'ing new roads for GIS and "Mobility" (Washington County Road Admin Board); geocoding addresses for Employer Commute Trip Reduction programs; Mapping Proposed Roads to be Established by County Commissioners; Automating tasks using ModelBuilder and Python; Customizing ArcMap projects using VBA with ArcObjects
- Asset and resource management, regulatory compliance
- Planning level mapping and displays for environmental, emergency, traffic volumes/congested areas, bike-ped paths, etc
- Mapping locations of endangered species (salmon, & other fish), critical habitat, Mapping and analysis in support of the Marine Mammal Protection Act & Magnuson Stevens Act (ex; developing boundaries for the Rockfish Conservation Areas based on generalized depths, Mapping shoreline segments for the Marine Mammal Stranding Network maps,)
- Processing large data sets for public consumption (Small Area Estimate program estimates, Census TIGER files, etc). Internet mapping. We have a lot of data that can be disseminated to the public via custom mapping applications. Ad hoc analysis (Census boundary, count reviews, etc.). Intermediate data processing (address matching, geocoding building permits, etc.). Production tools (PopCalc-allocate population and housing to small areas).
- Mapping location of assets along state routes, e.g. guardrails, cabinets, ditch, etc
- Planning: identifying highway needs (safety, capacity, infrastructure preservation). Environmental management: locating compliance issues and anticipating environmental issues. Maintenance: locating roadway maintenance activities needed, planned and executed; verifying compliance with commitments and regulations. Resources planning: infrastructure inventory and mapping. Strategic planning: inventory of agency facilities and services, distribution of activities and spending. Public information: mapping transportation information for the public (traffic flow, live cameras, ferry locations).
- Cartography, Land use planning, Environmental/habitat modeling
- HPMS, traffic and collision data, state highway inventory data
- Provide sales tax maps for support of destination-based sales tax program. Provide Tax Code Area maps for support of utility company valuation program, tax monies go to county tax districts. Provide GIS analysis for state legislature requests. Provide GIS support for forest tax program, including NAIP imagery viewed with parcel layer and underlying data.
- Improving legislation and the deliberation process and redistricting
- You have got to be kidding. As an enterprise GIS is hard to find any County government business need that is not using GIS or would not benefit from it. Our list of projects/users would fill several pages.

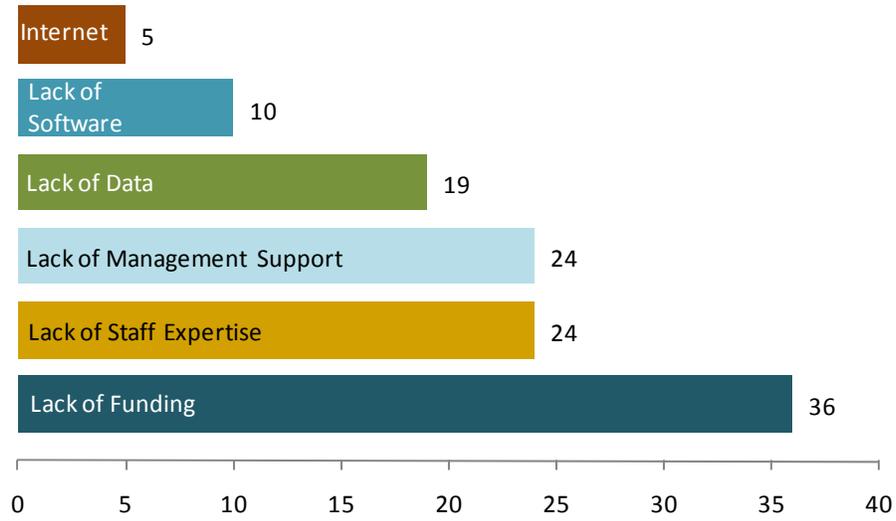
- Mapping and analysis of the locations of traffic collisions, pavement conditions, bridges that have inadequate seismic characteristics, assets, locations of environmental sensitivity, and unstable slopes that impact highways.
- Managing winter operations by tracking highway maintenance vehicles such as incident response and snow plows and their operations.
- Mapping road closure locations during EOC activations
- Mapping vehicle miles traveled and green house gas emissions.
- Prioritize investments based on spatial analysis including but not limited to many of the above.
- Critical Area Mapping: wetlands, streams
- Providing interactive maps to field crews on laptops or other handheld devices.
- Web based interactive mapping applications (road closure, average daily traffic counts, AVL for snow plows)
- The primary focus for GIS in our agency is to support the work of our on-staff planners as well as our member jurisdictions.
- Groundwater & environmental data mapping.
- "Address Location" + "Property Zoning" + "Water Meter Locations" + "Development Project Locations" + "Planning for Snow Events" + "City Project Notifications"
- We map all of our sewer information and keep them in database w/ inspection data plus use GIS in construction/planning stages of the capital project
- At DNR (state lands management part) we are primarily concerned with ways to make revenue producing activities (forestry, leases, etc.) more efficient. This means providing relevant data to field staff as well as relevant data to planners.
- Local zoning maps
- Too many to list, but mostly very simple stuff.
- Project Planning and permitting
- Mapping/Analysis of cleanup activities and environmental sampling locations within Washington state. Provide information to the public about environmental cleanups.
- GIS is used at all levels of making state wide resource management decisions, for too many to list here.
- Completing resource management analysis and species interactions.
- Everything from finding your way to a timber sale to modeling. Way too wide to list here.
- Asset Management, Facility Planning, Emergency Response, environmental issues (hazardous material tracking, endangered or invasive species), operational planning (military).
- Analysis for planning of multiple uses on public lands including mining, wildlife, grazing, recreation, forestry, transportation, energy production, and wilderness. Mapping for fire fighting - water sources, transportation, topography. Inventory for forest stands, wetlands, minerals.

- Federal reporting of roadway data, spatial analysis of the data
- Mapping of priority habitats and species (threatened, endangered, sensitive, candidate, game species, important habitats). Mapping of fish passage barriers. Scientific data collection in the field. Providing interactive mapping applications to the public to assist with there project planning. Provide interactive mapping applications for use by agency staff.
- My company mostly makes maps of project locations - kind of "maps R us" - but the GIS analysts could do more if more data was readily available with documentation.
- Map and maintain road side inventory and other road related data via ArcPad. Provide ArcGIS Server Internet mapping applications to staff and public. Maintain data for emergency responders. Create map books for E911 and public. Create and maintain ArcReader projects for building permit review and tax assessments.
- Situational Awareness - Commonn Operating Picture. Knowing the location and status of any incident of statewide interest.
- Too many to list... Accurate utility infrastructure for in-house and field crews; Current zoning/comp plan and other land use data for planning, Accurate and current cadastral data for EMS/planning purposes..., GiS support for economic development and Capital project management

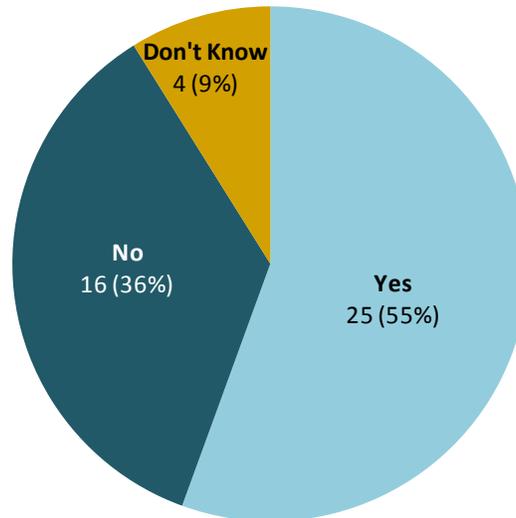
**13. Please rate the level of GIS support and services you currently have for your business functions**



14. Are there any constraints or impediments that you face in obtaining the GIS support and services that you require for your business needs? (Please select all that apply)



**15. Do you consider your organization to have an "enterprise GIS," system(s) for delivering organization-wide geospatial information and capabilities?**



**If yes, please list enterprise capabilities**

- Our interactive web map application connects w/ planning & building's permit application. The addresses also use this application. All employees have access to several different mapping applications.
- Centralized GIS database. Creating integration with legacy systems and data maintenance applications. Developed desktop application to access available GIS data by all staff. Developed desktop application to allow staff to maintain their data values in the GIS database. Generating procedures to improve the existing processes for data maintenance.
- We've developed an extensive enterprise GIS that is integrated throughout our business. There is too much to describe. I'd like to provide comments for question 16 but there is no place to comment so I'll make them here. I don't want to download (FTP) another dataset that is outdated the minute after I download it. I'm MOST interested in web services that can be subscribed to for data.
- Available at County Internet site--countywide data; query parcel data, layer display options, markup tools
- Our Enterprise systems are in development
- Close but not quite there yet.
- We have enterprise capabilities around data
- I'm not sure of this answer, but we have a SQL Server and agency-wide geodatabase for access to agency data. I am also guessing at answers in question 16.
- Enterprise version is in its infancy and we are just learning how to share between legislative agencies and how to deal with security issues for intranet- and internet-based applications.

- Central GIS database Central GIS staffing Central GIS Web Applications One central GIS system for all of Clark County Cities, schools, ports, library, County,...
- Yes. We have enterprise GIS:
  - Established data catalog with metadata
  - Standard software (desktop and server).
  - Central training with customized agency flavor. Includes ESRI certified trainer.
  - Help Desk staffed by central GIS support staff and distributed GIS analysts.
  - Core GIS software customizations to provide agency specific tools such as the GIS Workbench (ArcMap), TransMapper (ArcGIS Explorer), and milepost location tools. No. We don't have enterprise GIS:
    - Incorporation of spatial tools into enterprise software applications beyond a basic starting point
    - Adequate server infrastructure
    - Consistent support from enterprise IT.
- Yes, we have Enterprise systems, but are lacking the staff to implement. We could deliver organization-wide GIS using open source, or free viewer software
- "Yes" for King County wide services but "No" for Road Services enterprise. We hope to be actively moving in that direction for 2010.
- Although on a smaller scale than larger entities, we do have adequate data and applications in place to characterize our GIS as "enterprise".
- software distribution, data management, application development, data library management
- Centralized data repository (ArcSDE) Data viewing applications (ArcGIS, ArcIMS, etc.) Dedicated GIS staff for management, stewardship, analysis, etc.
- We have enterprise software availability but most projects are done at the department or project level. As a result, we have several 100K projects doing the same thing in different 'contractor' developed systems.
- For the most part yes and more GIS integration is continuing/has been included in my business applications- The central Ecology GIS shop has shared geoprocessing and cached map services. They are creating a map server control for web developers at the agency (this is to help integrate a map easier into an application for our web developers). We've identify program SLA needs and the Central GIS shop has worked with ESRI on map service redundancy for agency GIS applications.
- WADNR is trying to get there.
- I have no idea what is being asked here.
- IMS servers for imagery distribution. Major data sets are maintained in SQL databases and maintained by county office.
- Ongoing centralization with CITRIX network. Statewide layers in Arc SDE. Access to national raster datasets - orthophotography, DRGs

- We have several statewide databases for fish, wildlife, and habitat information served to the agency staff using SDE. We have a few web mapping applications available for use by the public and our own agency staff.
- We are kind of in between not having an enterprise GIS and having a full enterprise GIS. We are moving towards a full enterprise GIS, but not quite there yet. We have an ESRI ELA, so we have plenty of software support. We have beefed up our data in some areas, but some departments are lacking data maintenance. Our infrastructure is adequate at the moment, but will need to expand in the near future.
- We have shared data servers. Backup and organization has long been a problem.

**16. On a scale of 1 through 5, please rate your level of interest in the following web enterprise GIS capabilities, if they were available as web services.**

