

# GIS



Enterprise-wide Solutions

Towns, Cities, Counties

Database Design

## **Professional Consulting Services for a Geographical Information System (GIS) Strategic Plan**

Strategy

Innovation

# GEOGRAPHIC TECHNOLOGIES

[www.geotg.com](http://www.geotg.com)

Development

1.888.757.4222

Web Technology

Data Conversion

Organizational Issues

Central Repository

Data Migration

Automated Data Collection

GIS Training

Local Government

Submitted by:

# Geographic Technologies Group

North Carolina

Georgia

Texas

Florida

Illinois

July 9, 2004

Drew Gidlof  
City Manager's Department  
1110 West Capitol Avenue, Third Floor  
West Sacramento, CA 95691

**Dear GIS Selection Committee:**

**Geographic Technologies Group, Inc.** (GTG) is submitting for your review a proposal to revise the existing *Geographical Information System (GIS) Strategic Plan*. The proposed scope of work will include a GIS Needs Assessment, System Design, and Phased Implementation Plan.

We feel confident that **our state, national and international award winning GIS experience**, and our expertise with needs assessments, implementation planning and system design makes us the best choice for the City of West Sacramento.

Our award winning GIS implementation planning methodology - **"Seven Keys that Guarantee the Success of Your GIS"** will allow us to provide a successful, well-planned and optimal enterprise-wide solution for furthering the City of West Sacramento's GIS efforts. We are confident in our ability to work with you to successfully identify the needs of the City and to develop a detailed road map for implementation. Some of our most recent "GIS Needs Assessments and Strategic Implementation Plans" have incorporated recommendations detailing issues that are important to the City of West Sacramento.

**GTG was founded to assist local government with GIS Needs Assessments and Implementation Planning.** Our success in assisting local government can be attributed to our stringent hiring practices. We understand that to successfully work for local government, we need staff that have local government experience. Therefore, we have hired staff that have been practicing GIS Coordinators in local government. This gives us intimate insight into how local government functions and what must be accomplished to successfully implement GIS technology.

**As a group of former local government GIS Coordinators**, we understand that we are not only looking at how to implement GIS technology but how to get the most out of existing investments in technology. In our former GIS Coordinator roles and as consultants to local government nation-wide, we have integrated GIS with almost all municipal government software packages to include those utilized by the City of West Sacramento. In order to assist our clients, we have developed successful tools that have allowed us to integrate GIS with your existing investments in technology. Our experience gives us **in-depth knowledge of existing systems** that no other consulting company can offer. Our successful integration with existing technology has prompted various national technology companies such as SunGard HTE to adopt our local government GIS tools as the solution of choice for their clients.

We believe that we offer the best solution for the City of West Sacramento based on the following reasons:

- ✓ 1. Two seasoned GTG **owners with over 35 combined year** of “real GIS implementation experience” will be dedicated to the project – supported by a cadre of GIS professionals with “hands-on” local government experience.
- ✓ 2. A company that has won **state, national, & international awards** for GIS implementation planning, and the winner of the 2003 Florida City and County Management Association (FCCMA) award.
- ✓ 3. Incorporated in 1997, GTG was **conceived and organized to support local government** GIS implementation – a true local government GIS consulting company.
- ✓ 4. A comprehensive and successful **GIS Implementation Planning Methodology** - “Seven Keys that Guarantee the Success of Your GIS” that addresses GIS integration, Utility Management, portable in-field mapping capabilities, GASB 34 requirements, wireless access and internet solutions.
- ✓ 5. **Outstanding references from towns, cities, and counties across the United States** for planning, designing, and implementing optimum and cost-effective Geographic Information Systems (GIS) on time and within budget.
- ✓ 6. **Unmatched technical hands-on GIS capabilities and strategic business partnerships:** Certified Environmental Systems Research Institute (ESRI) ArcGIS trainers, certified Global Positioning System (GPS) Trimble Navigation training, and **Certified Microsoft Developers and IBM iSeries AS/400 Specialists** allow GTG to lead the way in GIS consulting. Solid business partnerships with ESRI (Business Partner of the Year 2000) and Microsoft allow GTG to be organized around the latest technology.

The entire GTG team would like to thank you for allowing us to propose on this project. Our solutions will provide West Sacramento a GIS on par with the best GIS programs in similar sized cities across the nation. We look forward to visiting the City of West Sacramento and presenting to you how we can guarantee the success of GIS. Should you have any questions during the review of the proposal, please call us at 888-757-4222.

Respectfully Submitted,

Mr. Curtis Hinton  
Chief Executive Officer



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[davidh@geotg.com](mailto:davidh@geotg.com)

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Geographic Technologies Group  
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Goldsboro, NC 27534  
Tel. 919.759.9214  
Fax 919.759.0410  
[curth@geotg.com](mailto:curth@geotg.com)



# Geographic Technologies Group

Geographic Technologies Group, Inc., (GTG) offers professional Geographic Information Systems (GIS) and Global Positioning System (GPS) consulting services. GTG was formed in 1997 by Mr. David A. Holdstock and Mr. Curtis A. Hinton. These two leading authorities in GIS and GPS implementation planning have over thirty-five combined years of experience, education, publications, and honors.

GTG is a full-service GIS consulting company offering teamwork, cost-effective practical GIS solutions, technical support, and projects that prepare organizations for the information management challenges of the 21<sup>st</sup> century. GTG has six offices located in North Carolina (Raleigh and Goldsboro), Florida, Georgia, Illinois and Texas. We are actively seeking a candidate to staff our new west coast office. GTG's vision is to assist towns, cities, counties, and other organizations in **implementing and utilizing geographic technologies to save time, lives, and money**. GIS and GPS technology has received overwhelming acceptance by local, state, and federal government organizations. Communities are now taking responsibility for the efficient and effective management of their assets and resources. GTG offers "hands-on" experience in the planning, design, procurement, and implementation of geo-technologies.

#### **GTG's services include:**

- GIS Needs Assessments & Strategic Implementation Planning
- Database Design, Conversion and Creation
- GIS Software Engineering and Integration Services
- World Wide Web Mapping Development
- Automated Field Data Collection & GPS Services
- Planning, and Training
- GIS Technical Support

#### **GTG's clients include:**

- Planning and Community Development Departments
- Public Utilities
  - Water
  - Waste Water
  - Storm water
- Police and Law Enforcement
- Tax Assessor and Land Records Administration
- Fire and Emergency Services
- Information Technology (IT)
- Engineering
- Elections
- Solid Water and Landfill Departments
- Parks and Recreation
- Buildings and Inspections
- Public Works Departments
- Transportation
- Environmental Health and Human Resources
- Social Services
- City Clerks Office
- City Managers

- Library
- Water Management Districts
- Federal Agencies

### GIS Needs Assessments and Strategic Implementation Planning Clients:

City of Athens, Georgia	City of Roanoke, Virginia
City of Ardmore, Oklahoma	City of Rome, Georgia
City of Alpharetta, Georgia	City of Salisbury, Maryland
Town of Boone, North Carolina	City of West University Place, Texas
City of Boynton Beach, Florida	City of Wilson, North Carolina
Town of Commerce, Georgia	Calvert County, Maryland
City of Danville, Virginia	Carteret County, North Carolina
City of Greenville, North Carolina	Columbia County, Georgia
City of Kissimmee, Florida	Duplin County, North Carolina
City of LaPorte, Texas	Floyd County, Georgia
Town of Leesburg, Virginia	Forsyth County, North Carolina
City of Marietta, Georgia	Gwinnett County, Georgia
City of Maryville, Tennessee	Henrico County, Virginia
Town of Matthews, North Carolina	Richland County, South Carolina
City of Miramar, Florida	Rockingham County, South Carolina
City of North Myrtle Beach, South Carolina	Rome County, Georgia
Town of Nags Head, North Carolina	Wayne County, North Carolina
City of Pearland, Texas	Wicomico County, Maryland
City of Pembroke Pines, Florida	Wilson County, North Carolina

### GIS – Integration Clients

Alexandria, Virginia	Cucamonga County Water District, California
Athens Clarke, Georgia	City of Dalles, Oregon
City of Aurora, Illinois	Danbury, Connecticut
Bahamas Electricity Corp	Danville, Virginia
Bismarck/Burleigh, North Dakota	Delaware Police Dept., Ohio
City of Bossier, Louisiana	City of Dothan, Alabama
Butler County, Kansas	Douglas County, Georgia
Cabel County, West Virginia	City of Dublin Police Dept., Ohio
Calcasieu Parrish, Louisiana	East Point, Georgia
City of Cape Coral, Florida	City of Eau Claire, Wisconsin
Ceres, California	Escambia County Utilities Authority, Florida
Charter Van Buren Township, Michigan	Eureka, California
Cheyenne, Wyoming	City of Fairbanks, Arkansas
City of Missouri City, Texas	City of Forest Park, Georgia
Clayton County, Georgia	Franklin Park, Illinois
City of College Station, Texas	City of Galt, California
Conway City of, Arizona	Golden, Colorado
City of Coral Springs, Florida	Greenville County EMS, South Carolina
City of Country Club Hills, Illinois	

## Geographic Technologies Group – Offices

### **North Carolina- Goldsboro**

648 North Spence Avenue  
Goldsboro, NC 27534  
Phone: (919) 759-9214  
Fax: (919) 759-0410

### **Georgia**

683-D North Belair Road  
Augusta, GA 30809  
Phone: (706) 228-7208  
Fax: (706) 228-7208

### **Florida**

100 First Avenue South  
Suite 269  
St. Petersburg, FL 33701  
Phone: (727) 287-1569

### **Texas**

1809 Gilmer Road  
Suite 120  
Longview, TX 75604  
Phone: (903) 295-8080  
Fax: (281) 412-9098

### **Illinois**

823 South Western Ave  
#4  
Chicago, IL 60612  
Phone: (706) 572-4900

### **Maryland**

Pending

### **California**

Pending

Federal Tax ID Number:  
56-2038173

## Geographic Technologies Group

Established 1997  
6 Years in Business  
26 Employees

# Geographic Technologies Group

A Full Service Local Government GIS Company

- Established 1997

- North Carolina
- Florida
- Texas
- Georgia
- Maryland
- Illinois

Microsoft Business Partner and Developer

Oracle Developer

Award Winning GIS Company

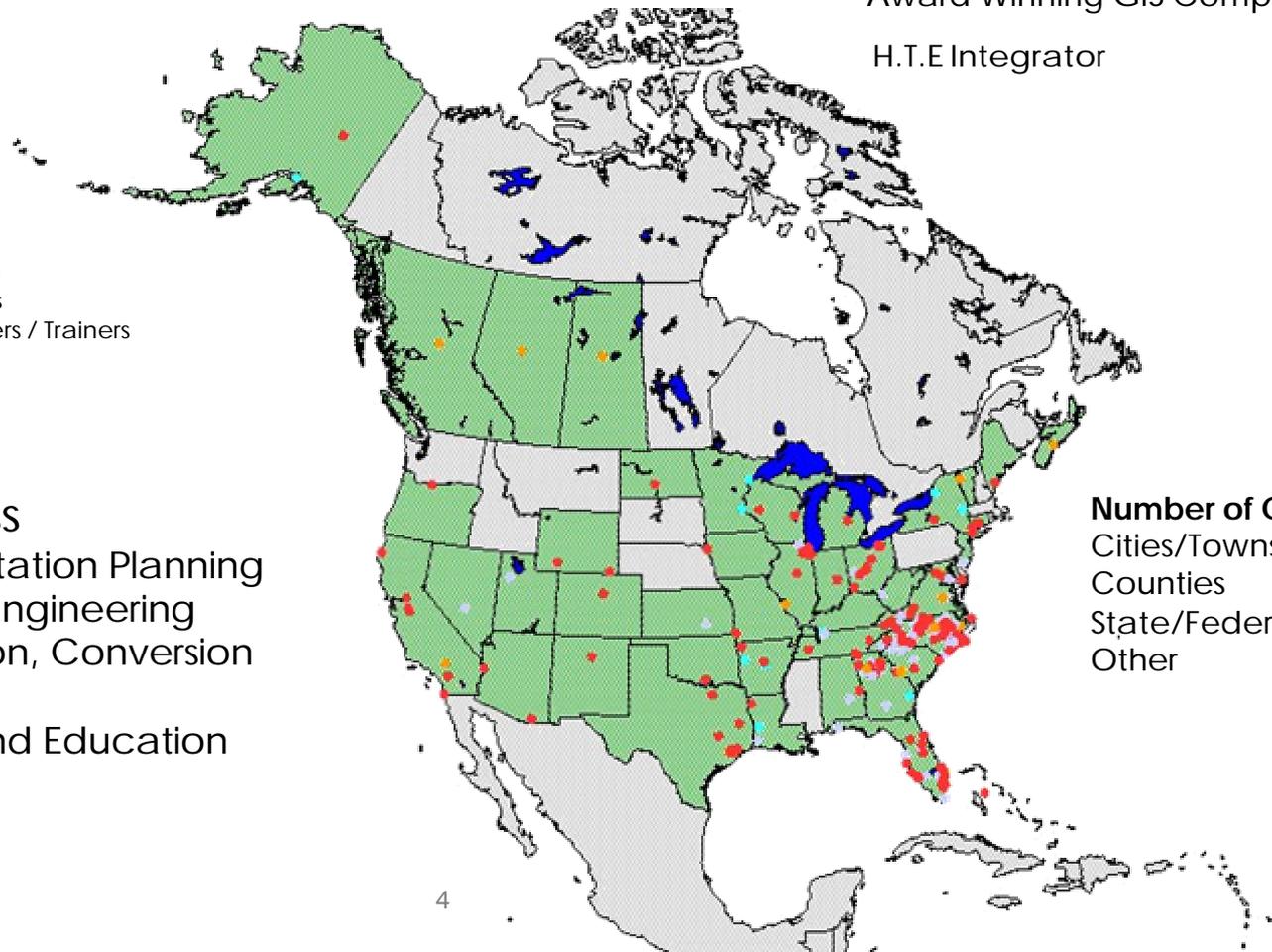
H.T.E Integrator

- 26 Staff

- 2 Owners (S Corporation)
- 5 Regional GIS Managers
- 6 GIS Technician / Installers / Trainers
- 8 Programmers
- 4 Administration
- 1 Marketing & Design

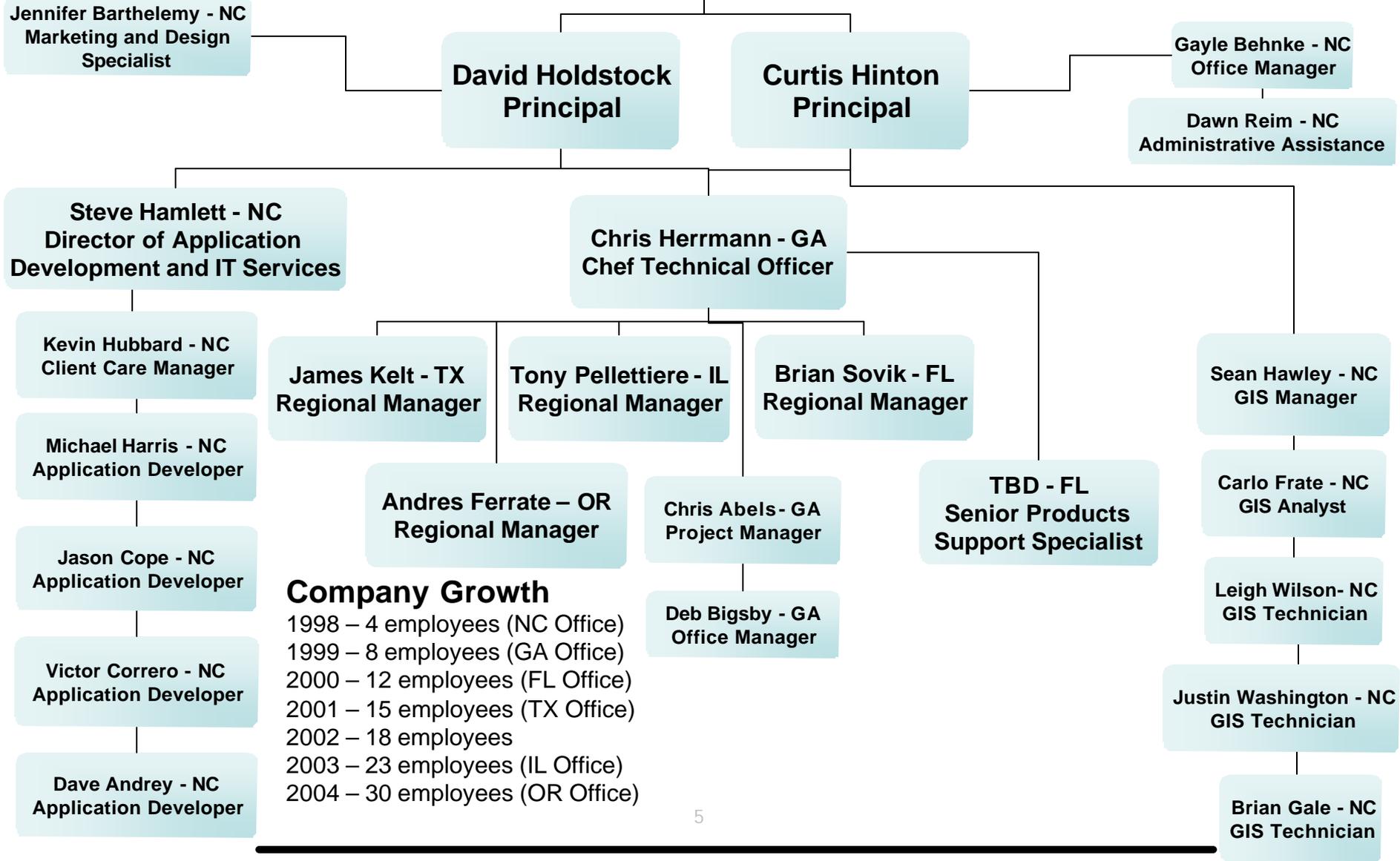
- Core Business

- GIS Implementation Planning
- GIS Software Engineering
- Data Collection, Conversion and Creation
- GIS Training and Education



### Number of Clients

Cities/Towns	131
Counties	72
State/Federal	17
Other	26



**Company Growth**  
 1998 – 4 employees (NC Office)  
 1999 – 8 employees (GA Office)  
 2000 – 12 employees (FL Office)  
 2001 – 15 employees (TX Office)  
 2002 – 18 employees  
 2003 – 23 employees (IL Office)  
 2004 – 30 employees (OR Office)

# Key Project Staff



- David Holdstock**
- GTG Partner & Owner
  - Former GIS/GPS Director at North Carolina State University (NCSU) Engineering Research Program
  - GIS Cost Center Manager for Parsons Brinckerhoff, Inc., New York. Largest Engineering Company in the World
  - Over 15 years of GIS and GPS experience.
  - Worked for over 50 Local, State and Federal Governments.
  - Under book contract: "A Practitioners Guide to Implementing GIS and GPS for Towns, Cities and Counties."
  - Certified GPS and GIS Instructor at NCSU.
  - Extensive Publications and Presentations:
    - (a) Civil Engineering & GIS
    - (b) Enterprise wide GIS Tools
  - Worked extensively - Public Works / Engineering
    - (a) NPDES
    - (b) NFIP
    - (c) CMOM
    - (d) GASB34

**Project Manager**  
David Holdstock

**GIS Integration Specialist**  
Chris Herrmann

**Project Manager**  
Curtis Hinton

**GIS Projects Manager**  
Andres Ferrate

**GIS Manager**  
Sean Hawley

- Curtis Hinton**
- GTG Partner & Owner
  - Received State, National and International GIS Design and Implementation Awards
  - Over 15 years of GIS implementation experience.
  - Head GIS Instructor – URISA’s GIS Implementation Course.
  - Under book contract: "A Practitioners Guide to Implementing GIS and GPS for Towns, Cities and Counties."
  - Presents "Seven Keys to a Successful GIS" throughout the United States.
  - Certified GIS Instructor
  - Extensive Publications:
    - (a) Database Design
    - (b) Software Integration (HTE)
  - Presented "Enterprise-wide Tools & GIS Solutions"
  - Worked for over 50 state, local, and federal Organizations





## Key Project Staff

David Holdstock – Project Manager    Owner                      18 Years Experience

Mr. David Holdstock has been working with GIS for state, federal, and local governments since 1985. David was the **GIS Cost Center Manager in Manhattan, New York, for the world's largest transportation engineering company, Parsons Brinckerhoff Quade & Douglas**. As PBO&D's GIS Manager, David was responsible for the use and application of GIS technology in numerous Public Works Utilities, Engineering, transportation, planning, and environmental projects. David has also been the Geographic Information Systems/Global Positioning System (GPS) Director at North Carolina State University – Institute for Transportation Research and Education (ITRE). He established ITRE as one of the state's leading training and education centers for GIS and GPS. David managed and organized a very successful GIS training program and created a new GPS Trimble certified training center. David's role as Director allowed him to work with many local governments in the Carolinas on GIS/GPS projects in implementation, feasibility studies, software development, database creation, and spatial analysis. **Mr. Holdstock is the owner and founder of Geographic Technologies Group**. David has been responsible for numerous GIS implementation projects throughout the United States and beyond. He has provided GIS services to well over 50 town, city and county governments. **David is now under contract to write a book titled, "Implementing GIS and GPS Technology for Towns, Cities, and Counties"**.

Curtis Hinton – Project Manager    Owner                      18 Years Experience

Mr. Hinton has been working in the GIS field since 1985. As Wilson, North Carolina's GIS Coordinator, Curtis spearheaded the development and implementation of GIS for the City of Wilson. He was successful in securing for the **City of Wilson state, national, and international awards for the exemplary and comprehensive use and citywide implementation of GIS**. Curtis is an ESRI Certified Instructor as well as the lead "GIS Implementation" course instructor at the national Urban and Regional Information Systems Association (URISA) and GIS/LIS conferences. He also teaches the "Introduction to GIS" course at national and regional conferences. In addition, Curtis presents GTG's "Seven Keys to Successful GIS" throughout the United States. Curtis was the assistant workshop chair for the two major GIS conferences for 1999 and was the chair in the year 2000. Curtis has written extensively on the topics of GIS. He has written articles for Geographic Technologies Group, Inc. Info Systems Magazine and a series of seven articles for the International City/County Management Association's INFOTECH Journal. In the past, he published a technical GIS periodical for two years. **Curtis is now under contract to write a book titled, "Implementing GIS and GPS Technology for Towns, Cities, and Counties"**.

Chris Herrmann – GIS Integration Specialist    10 Years Experience

Mr. Chris Herrmann will provide day-to-day GIS support/database design for this project. He has been active in the GIS field for nearly ten years, both as a GIS professional and, over the past several years, a regional instructor for Urban and Regional Information Systems Association (URISA). **Chris is a leading expert in SunGard HTE GIS Integration**. He worked for the Central Oklahoma Economic Development District (COEDD), a regional governmental organization, and was responsible for assisting member communities with GIS implementation, planning, grant administration, and economic development. Chris then became the Police

Information Systems Coordinator at the City of Wilson, NC, where he was instrumental in leading the city to three national and international awards. In late 1994, Chris accepted the position of GIS Coordinator for the City of Danville, VA. This position allowed Chris to gain experience with all organizational considerations involved with the implementation of an enterprise-wide GIS. All of Danville's GIS-related projects were centralized under the direction of Chris, including those from the public Electric and Gas utilities to the Public Works and Community Development Departments. **He has expertise in Arc/Info, AML, GPS, SDE, Visual Basic, MapObjects, ArcView, Unix and WindowsNT.** Since 2001 Mr. Herrmann has spearheaded the integration of GIS with H.T.E software for clients throughout the United States. **It is estimated that GTG has integrated GIS with H.T.E for over 80 city, town, or county clients in the United States.**

Andres Ferrate – GIS Projects Manager	7 Years Experience
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Andres has over seven years of experience in the **GIS/GPS field focusing on project management, data migration and integration, application development, and GIS coordination.** Andres holds a master's degree in Geography from the University of Oregon, where his studies focused on natural resource management and GIS. After completing his degree from the University of Oregon, Andres worked as a GIS Coordinator for the Metropolitan Washington Council of Governments, a metropolitan planning organization (MPO) in Washington, D.C. As a GIS Coordinator, he was responsible for the **overall management and coordination of the Department of Environmental Programs' GIS,** including coordination of spatial data transfer, analysis, and integration among multiple levels of government (city, county, state, and federal). Prior to joining GTG, Andres worked a Project Manager for Questerra, an application service provider (ASP) that provides enterprise location-enabled (spatial) technology and business intelligence services to Fortune 500 companies. As Project Manager for Questerra's Data Services department, Andres was **responsible for assessment of functional and technical requirements for implementation of data migration and integration projects, client-facing project and resource management, user needs and requirements analysis and assessment, technical writing, design and development of data control processes and procedures, and geospatial analysis (geoprocessing).** Andres has also worked as a consultant for The World Bank and other organizations. Since joining GTG, **Andres has immediately contributed to the management of several GIS projects, including writing GIS implementation plans.** He has a wide array of GIS skills, including comprehensive knowledge of the full ESRI suite of products, enterprise databases, geospatial data migration and integration, application development, and GPS equipment and software.

Sean Hawley – GIS Manager	3 ½ Years Experience
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Mr. Sean Hawley will provide GIS technical services and support for this project. **He has over three and half years of serving as GTG's lead GIS professional.** Since joining GTG, Sean has conducted and managed projects that involved **GIS implementation planning, GPS collection, instructional class preparation, database design, data conversion/creation, software installation, and training throughout the United States.** Mr. Hawley currently serves as a GIS Manager with GTG, Inc. and is pursuing a Masters degree in Geography from East Carolina University. Sean is proficient in **ArcInfo Workstation, ArcView 3.3, ArcGIS 8.3, GPS data collections systems, and is an ArcGIS 8.3 ESRI Authorized Instructor.**



## References

The following ten references have been selected based on the nature and content of the project and the proposed scope of services.

- #1 City of Folsom, CA  
Evert Palmer, (916) 355-7220 [epalmer@folsom.ca.us](mailto:epalmer@folsom.ca.us) 2004-present
  - ✓ GIS Implementation
  - ✓ System Design
  - ✓ Consulting
  - ✓ Mutli-Year Contract
  
- #2 Columbia County, GA  
Marilyn Heuer, (706) 868-3359 [mheuer@co.columbia.ga.us](mailto:mheuer@co.columbia.ga.us) 1999-present
  - ✓ GIS Implementation
  - ✓ System Design
  - ✓ Consulting
  - ✓ Mutli-Year Contract
  - ✓ Internet Solutions
  - ✓ Intranet Solutions
  - ✓ HTE Integration
  
- #3 Calvert County, MD  
Kathleen O'Brien Branch, (410) 535-1600 [branchko@co.cal.md.us](mailto:branchko@co.cal.md.us) 2003
  - ✓ GIS Implementation
  - ✓ System Design
  - ✓ Consulting
  - ✓ Mutli-Year Contract
  - ✓ Internet Solutions (Pending)
  - ✓ Intranet Solutions (Pending)
  
- #4 Town of Leesburg, VA  
John Callahan, (703) 771-2704 [jcallahan@leesburgva.org](mailto:jcallahan@leesburgva.org) 2003
  - ✓ GIS Implementation
  - ✓ System Design
  - ✓ Consulting
  - ✓ Mutli-Year Contract
  
- #5 Forsyth County, GA  
John Kilgore, (770) 781-2108 [jmkilgore@co.forsyth.ga.us](mailto:jmkilgore@co.forsyth.ga.us) 2003
  - ✓ GIS Implementation
  - ✓ System Design
  - ✓ Consulting
  - ✓ Mutli-Year Contract
  - ✓ Internet Solutions
  - ✓ Intranet Solutions

**Project Title**

**GIS Master Plan Development**

**Client**

City of Folsom, California

**Project Description**



The City of Folsom, CA wanted to determine if GIS was a cost-effective technology that would increase their effectiveness and efficiency. The City contracted with GTG to perform a needs assessment, inventory their current capabilities, and develop a three year phased GIS implementation plan. In 2004 GTG will perform the following tasks:

*Reference:*  
Curtis Hinton &  
David Holdstock

- A Comprehensive GIS Needs Assessment
- A Three-Year Phased Implementation Plan
  - Vision Statement
  - Organizational Structure & Staffing Plan
  - Training & Education Strategy
  - GIS Design, Maintenance, Update Solutions
  - Data Conversion Solutions
  - External Entities
  - Integration with Legacy Systems (HTE)
  - Software, Hardware, Networking Recommendations
  - Field Data Capture Solutions (GPS Tools)

*Title:*  
Geographic  
Information Systems  
Master Plan  
Development

The GTG team worked closely with the City of Folsom to develop a phased and enterprise-wide GIS solution. 2004 project highlights will include:

*Project Type:*  
GIS Implementation

- Ongoing Consulting Services
- Hardware Acquisition
- Software Acquisition
- GIS data layer creation, conversion, and design
- ESRI Certified Training

*Budget:*  
\$38,900

*Sponsor/Contact:*  
**Evert Palmer**  
La Porte, TX  
**(916) 355-7220**

**Year/Schedule**

2004 to present

**Project Fee**

\$38,900

**Project Staff**

David Holdstock – Project Manager  
Curtis Hinton – Project Manager  
Will Aycock – GIS Director

**Project Title**

**Needs Assessment, 3 Year Implementation Plan  
GIS Consulting Services, GPS Data Collection, Software Installation**

**Client**

**Columbia County, GA**

**Project Description**



*Title:*  
Geographic Information Systems Needs Assessment, Three-Year Implementation Plan  
GIS Consulting Services  
County Wide GPS Infrastructure Collection

*Project Type:*  
GIS Implementation and Consulting Services

*Budget:*  
\$250,000 +

*Sponsor/Contact:*  
**Marilyn Heuer**  
Communications/  
Research Analyst  
Evans, GA  
**(706) 868-3379**

Columbia County, GA is a rapidly growing community outside of Augusta, GA located on the Savannah River. The County is experiencing population growth and with it the increased pressure for automated information systems such as GIS and GPS tools. GTG provided a complete GIS Needs Assessment and a Three-Year implementation plan that addressed departmental structure and size, hardware and software, and all existing and future activities relying on maps and databases. A successful phased GIS implementation plan was developed and funding was secured. GTG also developed a plan and schedule for data creation. The GTG team worked closely with all departments to develop an enterprise-wide implementation of GIS based technology. Project work included:

- A GIS Needs Assessment
- A Three-Year Phased Implementation Plan
  - Vision
  - Organizational Structure & Staffing Plan
  - Training & Education Strategy
  - GIS Design, Maintenance, Update Solution
  - Data Conversion Solutions/Recommendations
  - External Entities
  - Software, Hardware, Networking Recommendations
  - Field Data Capture
  - GIS Software Prototyping (DIBS)
  - Annual Updates to the Implementation Plan

The GTG team is working closely with Columbia County to implement a total GIS solution. Early successes include the following:  
Successful GTG and ESRI software installations (ArcGIS, ArcIMS, ArcInfo, Gismo, GismoWeb, Maptouch)  
A GPS inventory of all of County water, storm water and sanitary infrastructure and geodatabase design  
Deployment of enterprise-wide Departmental Intranet Browser Solution (DIBS)

**Year/Schedule**

**On-Going**

**Project Fee**

**\$250,000 +**

**Project Staff**

**James Kelt – Project Manager  
Chris Herrmann – GIS Integration Specialist**

**Project Title**

**GIS Needs Assessment, Phased Strategic Implementation Plan**

**Client**

**Calvert County, MD**

**Project Description**



*Reference:*  
Curtis Hinton &  
David Holdstock

*Title:*  
Geographic  
Information Systems  
Needs Assessment,  
Phased Strategic  
Implementation Plan

*Project Type:*  
GIS Implementation

*Budget:*  
\$500,000+

*Sponsor/Contact:*  
**Kathleen O'Brien  
Branch**  
Asst. to City Manager  
Prince Frederick, MD  
**(410) 535-1600**

The County of Calvert, Maryland wanted to determine if GIS was a cost-effective technology that would increase their effectiveness and efficiency. The County contracted with GTG, Inc. to perform a GIS needs assessment, and develop a four-year phased GIS implementation plan. Project work included:

- A Comprehensive GIS Needs Assessment
- A Four-Year Phased Implementation Plan
  - Vision Statement
  - Organizational Structure & Staffing Plan
  - Training & Education Strategy
  - GIS Design, Maintenance, Update Solutions
  - Data Conversion Solutions
  - External Entities
  - Integration with Legacy Systems
    - Software, Hardware, Networking Recommendations
  - Field Data Capture Solutions (GPS Tools)
  - GIS Software Prototyping (GIS - Kiosk)
  - New Base Map Collection, Creation, and Maintenance
  - Annual Updates to the Implementation Plan

The GTG team worked closely with all departments in Calvert County to develop a true phased enterprise-wide GIS solution. Highlights included documenting practical cost-effective uses of GIS to elected officials and Year 1 implementation including:

- Parcel Base Map Creation
- New Aerial Photography
- Database Design
- Street Centerline Creation
- Integration of GIS to existing systems
- Planimetric Data Collection
- Ongoing Monthly Consulting Services

**Year/Schedule**

2002 Ongoing Services

**Project Fee**

\$30,000-500,000+

**Project Staff**

Curtis Hinton – Project Manager  
David Holdstock – Project Manager  
Sean Hawley – GIS Manager

<b>Project Title</b>	<b>GIS Needs Assessment, Feasibility Analysis, &amp; Implementation Plan</b>
Client	Town of Leesburg, VA
<p data-bbox="240 262 505 296">Project Description</p>  <p data-bbox="240 594 472 695">Reference: Curtis Hinton <b>David Holdstock</b></p> <p data-bbox="240 737 521 1014"><i>Title:</i> Geographic Information Systems Needs Assessment, Feasibility Analysis, and Implementation Plan</p> <p data-bbox="240 1056 467 1125"><i>Project Type:</i> Implementation</p> <p data-bbox="240 1167 399 1236"><i>Budget:</i> \$102,500.00</p> <p data-bbox="240 1278 496 1484"><i>Sponsor/Contact:</i> <b>John Callahan</b> GIS Coordinator Town of Leesburg, VA <b>(703) 771-2704</b></p>	<p data-bbox="566 249 1511 604">The Town of Leesburg, Virginia was beginning to implement GIS and determined that they needed a GIS Implementation Plan from which to guide a multi-year initiative. The Town of Leesburg GIS Steering Committee selected Geographic Technologies Group to create a GIS Implementation Plan and support the multi-year implementation. GTG met with each department to interview key personnel. The GTG team performed a GIS Needs Assessment and Feasibility Analysis. Based on their findings, GTG developed a cost effective three-year implementation plan. This plan addressed all technical and personnel issues that facilitate a successful GIS implementation. Project work included:</p> <ul data-bbox="566 642 1422 1058" style="list-style-type: none"> <li>A Comprehensive GIS Needs Assessment</li> <li>A Three-Year Phased Implementation Plan <ul style="list-style-type: none"> <li>Vision Mission, Goals and Objectives</li> <li>Organizational Structure &amp; Staffing Plan</li> <li>Training &amp; Education Strategy</li> <li>GIS Design, Maintenance, Update Solution</li> <li>Data Conversion Solutions (AutoCAD)</li> <li>External Entities and Intergovernmental Agreements</li> <li>Integration with Legacy Systems Strategy (Crime Mapping)</li> <li>Software, Hardware, Networking Recommendations</li> <li>Field Data Capture Solutions</li> <li>GIS Software Prototyping (DIBS)</li> <li>Annual Updates to the Implementation Plan</li> </ul> </li> </ul> <p data-bbox="566 1096 1511 1419">The GTG team worked closely with the GIS Steering Committee to develop a phased enterprise-wide GIS solution. Highlights included:</p> <ul data-bbox="664 1161 1468 1419" style="list-style-type: none"> <li>Pilot Project: Infrastructure CAD conversion</li> <li>Data Creation and Conversion Tasks</li> <li>Crime Mapping and Analysis Software</li> <li>Database Design Standards (Meta Data)</li> <li>Deployment of enterprise-wide Departmental Intranet Browser Solution (DIBS)</li> <li>GIS Training and Education</li> <li>Software upgrades and Implementation</li> </ul> <p data-bbox="566 1457 1406 1518">GTG continues to support the Town of Leesburg in the first year of implementation.</p>
Year/Schedule	2002-2003
Project Fee	\$30,000-102,500
Project Staff	Curtis Hinton – Project Manager David Holdstock – Project Manager Sean Hawley – GIS Manager

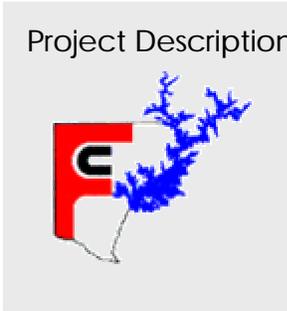
**Project Title**

**GIS Needs Assessment, Phased Strategic Implementation Plan**

**Client**

**Forsyth County, GA**

**Project Description**



Although Forsyth County has utilized GIS for several years, the County determined it needed help with organizational restructuring and assistance in moving GIS to the entire enterprise. GTG developed a three-year plan that made recommendations on how to enable the entire organization with geo-spatial data and the tools afforded by GIS. Optimal implementation and utilization of new database technologies and new GIS software models were detailed. Strategic recommendations for the management of the County's GIS were documented and are currently being implemented. GTG was retained by the county to perform the following tasks:

*Reference:*  
Curtis Hinton &  
David Holdstock

- A Comprehensive GIS Needs Assessment
- A Three-Year Phased Implementation Plan
  - Vision Statement
  - Organizational Structure & Staffing Plan
  - Training & Education Strategy
  - GIS Design, Maintenance, Update Solutions
  - Data Conversion Solutions
  - External Entities
  - Integration with Legacy Systems
  - Software, Hardware, Networking Recommendations
  - Field Data Capture Solutions
  - GIS Software Prototyping

*Title:*  
Geographic  
Information Systems  
Needs Assessment,  
Phased Strategic  
Implementation  
Plan

*Project Type:*  
GIS Implementation

The GTG team worked closely with the GIS Steering Committee to develop a true phased enterprise-wide GIS solution. Highlights included documenting practical cost-effective uses of GIS for:

*Budget:*  
\$ 29,000

- Public access touch screen applications
- Intranet/Internet GIS browser applications
- GPS Data Collection
- Utility/Facility Management

*Sponsor/Contact:*  
**John Kilgore**  
GIS Manager  
Cumming, GA  
**(770) 781-2108**

Year/Schedule	2003 (3 months)
Project Fee	\$ 29,000 +
Project Staff	David Holdstock – Project Manager Curtis Hinton – Project Manager Sean Hawley – GIS Manager



## Pricing Information Total Fee Estimate

### Phase/Task 1 GIS Needs Assessment

Project Team Member	Hourly Rate	Person Hours	Reimbursable Expenses	Total Fee
David Holdstock	\$100	25	\$902	\$3,402
Curtis Hinton	\$100	40	\$1,374	\$5,374
Andres Ferrate	\$85	60	\$1,374	\$6,474
Chris Herrmann	\$85	10	\$0	\$850
Sean Hawley	\$70	15	\$0	\$1,050
				<b>\$17,150</b>

### Phase/Task 2 System Design Recommendations

Project Team Member	Hourly Rate	Person Hours	Reimbursable Expenses	Total Fee
David Holdstock	\$100	23	\$466	\$2,766
Curtis Hinton	\$100	25	\$466	\$2,966
Andres Ferrate	\$85	70	\$466	\$6,416
Chris Herrmann	\$85	8	\$0	\$680
Sean Hawley	\$70	8	\$0	\$560
				<b>\$13,388</b>

### Phase/Task 3 Phased Implementation Plan

Project Team Member	Hourly Rate	Person Hours	Reimbursable Expenses	Total Fee
David Holdstock(1)	\$100	6	\$0	\$600
Curtis Hinton (1)	\$100	8	\$0	\$800
Andres Ferrate	\$85	32	\$342	\$3,062
Chris Herrmann	\$85	0	\$0	\$0
Sean Hawley	\$70	0	\$0	\$0
				<b>\$4,462</b>

**Total Project Cost      \$35,000**

*Note: (1) On-site work with no travel expenses*



## Project Understanding

Geographic Technologies Group, (GTG) understands that the City of West Sacramento requires a revision of the Geographic Information Systems (GIS) Implementation Plan. GTG proposes to conduct a GIS Needs Assessment, create a System Design, and create an enterprise-wide Phased Implementation Plan for the City of West Sacramento. The implementation plan will emphasize the following:

- Technological Infrastructure that supports a true enterprise-wide GIS, and facilitates use of GIS for both data custodians and data generators
- Development of enterprise GIS
- Leveraging existing GIS resources available internally and through the Yolo GIS Cooperative
- Full GIS integration with the City's existing information systems to support the I.T. "data one source" objective
- Data creation, conversion, registration, and ongoing maintenance
- Metadata documentation
- A strategy to provide public access to GIS data
- Staffing

GTG has identified the following key elements to illustrate our technical approach, methodology, qualifications, insight into project needs, and understanding of GIS implementation planning. The following represents our approach as it relates to accomplishing the project phases outlined in the scope of services:

✓ **1. A Competitive Cost Proposal and Appropriate Schedule**

The GIS master plan will need to be **comprehensive**, **phased** and **feasible**. GTG understands that the City of West Sacramento has budgeted funds for GIS planning and implementation. GTG proposes a budget of \$35,000 for all tasks outlined in the scope of services. GTG proposes a twelve-week schedule that is responsible and appropriate for the expected deliverables.

✓ **2. An Understandable GIS Implementation Planning Methodology**

GTG assumes that the City of West Sacramento requires a clear and concise **planning methodology** or "GIS roadmap" that is understandable to all departments and "Major Users" and will guide the city through implementation. GTG's award winning "7 Keys that Guarantee the Success of Your GIS" is proposed for the City of West Sacramento.

The process of developing a strategic GIS Master Plan and the ongoing management of a successful GIS initiative for the City of West Sacramento must include each of the seven keys: (Key 1) The development of a **Master GIS Development Plan**, (Key 2) An effective **Coordination** strategy, (Key 3) Show **Quick Success**, (Key 4) A strategy for **Education**, (Key 5) Make it **Easy to Use**, (Key 6) Develop a true **Enterprise-wide** solution, and (Key 7) Quantify the **Benefits and Costs**.

Recommended GIS Implementation Planning Methodology  
For the City of West Sacramento

**7 Keys that Guarantee the Success of Your GIS**

90% of all GIS initiatives are deemed less than successful!  
Many fail due to lack of planning and foresight! Be a part of the 10%!

Master Plan	Coordination	Quick Success	Educate	Easy To Use	Enterprise Wide	Benefits Vs. Cost
<ul style="list-style-type: none"> <li>A vital "first-step" for local, state, and federal agencies.</li> <li>Learn how to jump-start your existing GIS initiative.</li> <li>Learn how to share the plan to guarantee organization-wide support.</li> <li>Identify optimal uses of GPS and Web based tools.</li> <li>Identify funding opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>The most critical key to success!</li> <li>Identify the best solution for coordinating your GIS.</li> <li>Organize your GIS efforts to serve all departments.</li> <li>Identify where to locate the GIS coordination effort.</li> <li>What are the characteristics of an effective coordination strategy?</li> </ul>	<ul style="list-style-type: none"> <li>The first year will determine the success of your project!</li> <li>Guarantee support from managers, directors, and elected officials.</li> <li>Identify and target realistic "high impact" projects.</li> <li>How to "showcase" your successes!</li> <li>Leverage press and media coverage.</li> <li>Show successes and progress continually.</li> </ul>	<ul style="list-style-type: none"> <li>How to best educate your entire organization?</li> <li>Guarantee support throughout your organization.</li> <li>How to make GIS indispensable for your agency.</li> <li>Outsourcing vs. in-house education.</li> <li>Select the best tools i.e. newsletters, user groups, conferences.</li> </ul>	<ul style="list-style-type: none"> <li>How to deliver the right tools to the right person!</li> <li>Remove obstacles to GIS use.</li> <li>Task specific solutions.</li> <li>How to make GIS useful and easy to use.</li> <li>New GIS tools to ensure enterprise-wide use.</li> <li>GIS applications with little training.</li> </ul>	<ul style="list-style-type: none"> <li>Enterprise-wide usage - the litmus test for a truly successful GIS.</li> <li>As widely used as a word processor.</li> <li>GIS on everyone's desktop!</li> <li>Users in all departments.</li> <li>How to harness the power of GIS.</li> <li>How to turn raw data into meaningful information.</li> </ul>	<ul style="list-style-type: none"> <li>Quantify the benefits of GIS.</li> <li>Show how your GIS saves lives, time, and money!</li> <li>Guarantee continued support from organization leaders and elected officials.</li> <li>Identify revenue generating options.</li> <li>Real world examples.</li> </ul>

Geographic Technologies Group™

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- ✓ **3. A Small Cadre of Seasoned and Dedicated Professionals**  
The GTG Project Team will consist of a **small cadre of award winning seasoned GIS professionals** with demonstrated expertise in performing GIS needs assessments, developing phased implementation plans, and actually implementing the recommended effort solution. GTG and the City of Boynton Beach, recently (June, 2002) won the ["Florida City and County Management Association award for innovation in Communications and Technology"](#) (FCCMA). Over the last three years, GTG has worked extensively with many organizations to plan, design, and implement true enterprise-wide GIS solutions. We offer the very best consulting solution for the City of West Sacramento. GTG has a proven track record of planning, organizing, and managing GIS implementation.
- ✓ **4. A Successful, Stable, and Award Winning GIS Company**  
Our project team understands that the City of West Sacramento requires a successful and stable GIS company that was created for the sole purpose of GIS implementation planning - rather than a company that has added GIS as a discipline. GTG has

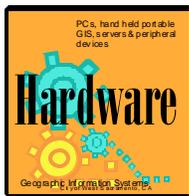
demonstrated successes, experience throughout the country, and a reputation for successfully implementing the right solutions.

✓ **5. A Proven and Reliable GIS Needs Assessment and Implementation Plan Process**

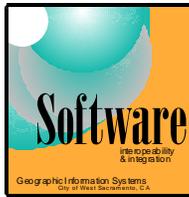
GTG has performed GIS needs assessments throughout the United States. Our team has developed a clear and concise approach. The graphic below illustrates all vital issues to be addressed during the needs assessment:



- Mission
- Vision
- Goals
- Objectives
- Cost Recovery / Revenue generation



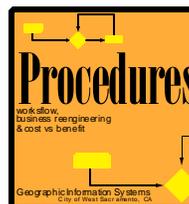
- PC's
- Hand held portable GIS
- Servers
- Peripheral Devices
- Future Trends
- Network



- Tier 1 - Flagship
- Tier 2 – Analytical Software
- Tier 3 – Browser Software
- Applications Solutions
- Networking Software



- Design
- Collection
- Maintenance
- Update



- Workflow
- Business Reengineering
- Cost vs. Benefit
- Existing Practices
- Performance measures

A GIS Needs Assessment is the first step in implementing a successful GIS within any government organization. The GIS needs assessment is required as it will allow the City of West Sacramento to adopt a true enterprise-wide GIS. Without a complete needs assessment, each department might proceed to adopt its own system and database that may or may not be compatible with those of another department. The largest benefit for an organization adopting a GIS is to realize efficiencies from common "base data" and the sharing of data among departments. At the conclusion of a needs assessment, the City of West Sacramento will have all of the information necessary to plan the development of a phased implementation of GIS.



# Technical Approach

Mr. David Holdstock and Mr. Curt Hinton will serve as Project Managers. They will be responsible for the content and quality of the final deliverables and the schedule identified in this document. Supporting Mr. Holdstock and Mr. Hinton is a small cadre of seasoned GIS professionals. This project understanding is organized into three phases:

## Phase I: GIS Needs Assessment

### 1.0 Kick-Off Meeting & Presentation

#### 1.1 Introduction to the Project

GTG will give a one-hour presentation introducing the GIS Needs Assessment and Implementation Plan. GTG will describe the process including data gathering techniques, evaluation and analysis, and final products. GTG will give an overview of successful, complete, comparable, and award winning government GIS implementations / initiatives. This introduction will also include the following:

- Project Goals and Objectives  
GTG will describe and detail the project goals and objectives including workflow, GIS framework, GIS applications, interoperability, and distribution of data, staffing, training, and phased implementation.
- Explanation and Description of Questionnaire  
GTG will describe and explain the "GIS Needs Assessment" questionnaire. Each department will be given a hard copy and e-mail version of the questionnaire. A schedule for completion will be identified during this phase.
- Project Questions and Answers  
GTG will allow time for questions and answers after the project introduction.

### 2.0 Departmental Interviews & Data Gathering

#### 2.1 Schedule Interviews

GTG will contact each City department to schedule on-site interviews. Interviews will be conducted over a three-day period with each department in one to two hour intervals.

The following is a list of departments:

- City Manager's Office
- Community Development
- Finance
- Fire
- Grants & Community Investment
- Parks & Community Services
- Police
- Public Works
- Redevelopment Agency

#### 2.2 Conduct Interviews

GTG will conduct interviews with key individuals representing each department, focusing on those identified by the City of West Sacramento as major users. Interviews will be used to solicit input from staff and senior management, and gather project related data and information about existing programs, personnel, budget information, hardware and software, web capabilities, as well as perceived needs and objectives.

#### 2.3 Inventory of Existing Resources

During the interviews GTG will conduct a comprehensive inventory of all projects - related resources and issues including the following:

2.3.1 Data Inventory.

GTG will develop a summary list of all existing local, state, and federal data sets including but not limited to: tax parcels, zoning layers, overlay layers, critical areas, land preservation areas, topographic layers, census data, and all Computer Aided Design (CAD) drawings.

2.3.2 Application Inventory

GTG will identify needs that could benefit by the development of GIS applications.

2.4 Inventory of Existing Hardware, Software, and Networks

GTG will identify and document all current hardware and software used by each City department, including network. The inventory will include existing hardware and software used for GIS purposes, as well as hardware and software for all additional purposes.

2.5 Document Current Work Flow & Business Processes with Major Users.

GTG will identify and document GIS related workflow and business processes. Where feasible, GTG will diagrammatically illustrate the flow of GIS related tasks by department and across department boundaries.

2.6 Identify GIS/Mapping Needs and Requirements,

GTG will identify all GIS / Mapping Needs including but not limited to:

- Data Accuracies:

GTG will identify and document for each department all existing data accuracies. GTG will develop a "Data Accuracy Matrix" illustrating all priority data, accuracy, sources, and utility i.e. underground/above ground utilities features.

- Data Generators and Data Custodians

GTG will identify and document all data generators and data custodians by department. GTG will develop a "Data Generators and Data Custodian Matrix"

2.7 Master Data List

GTG will develop a Master Data List (MDL) to include a data prioritization and technical ranking matrix. The matrix will document the following:

- Data source
- Applications that would depend on the data
- Number of interviews identifying data items as key business issues
- Approximate cost of implementation
- Potential for enhancement of mission, workflow, and/or business process
- Identified management priority for enterprise GIS
- Costs & benefits - especially life safety issues

2.8 Identify Activities Relying on Maps

GTG will identify and document all existing activities that rely on electronic and hardcopy mapping products.

2.9 Identify Activities Relying on Databases

GTG will identify and document all existing activities that rely on electronic and hardcopy databases.

2.10 Identify Data Maintenance, Update, and Modification Procedures

GTG will identify and document all existing data maintenance, update, and modification practices as is related to GIS data and databases.

2.11 Document Organizational Issues

GTG will document and diagrammatically illustrate the entire organizational structure. GTG will pay special attention to how the existing organizational structure relates to all GIS activities.

- Using organizational charts, GTG will depict GIS users throughout the organization  
GTG will depict levels of GIS need based on a three-tiered user hierarchy (power users, desktop users, and casual users).

#### 2.12 Evaluate and Document External Entities

GTG will identify and document all external entities that could influence or assist in the development of GIS. Special focus will be on state and regional organizations.

#### 2.13 Gather Supporting Documentation

GTG will gather copies of all project related documentation including but not limited to strategic plans, improvements plans, future growth plans, technology plans, and hazard mitigation plans.

### 3.0 Needs Assessment: Evaluation and Analysis

GTG will evaluate, analyze, and document the findings of the interviews, completed questionnaires, and information extracted from all supporting documentation.

#### 3.1 Needs Assessment Analysis and Findings

- GTG will produce a "Draft Departmental GIS Needs Assessment Technical Memorandum" detailing findings from phase one of the project
- GTG will produce a "Final Departmental GIS Needs Assessment Technical Memorandum" detailing findings from phase one of the project
- GTG will develop a power point presentation of the "GIS Needs Assessment Findings."

#### 3.2 Presentation of Findings to the City of West Sacramento

- GTG will give a 45 minute presentation of the final "Departmental GIS Needs Assessment Findings"

## **Phase II: System Design Recommendations**

### 1.0 Introduction

- Applying Geographic Information Systems (GIS) to the City of West Sacramento
- Quick Successes: Identification of strategies for using existing data to show success in the short term
  - Direct Tangible Benefits
  - Indirect & Intangible Benefits
  - Global Positioning System (GPS) Technology and Portable GIS Tools for The City of West Sacramento
  - Surveying / Mapping Grade GPS

### 2.0 GIS Vision, Goals and Objectives for the City of West Sacramento

2.1 GTG will develop a GIS vision with goals and objectives that will address the following:

#### 2.2 Organizational Vision

##### 2.2.1 Departmental GIS Goals and Objectives

### 3.0 Coordination, Organizational Structure, and Staffing Plan

GTG will create a recommended strategy for coordinating, organizing and staffing a successful GIS.

- Organizational Structure  
Centralized versus decentralized (or hybrid) structure for organizing GIS throughout the City with a focus on those identified as Major Users
- Job Descriptions

GTG will recommend modifications and/or new job descriptions required for the recommended phased implementation of GIS

- Cost Recovery

GTG will document the ability of the City of West Sacramento to implement GIS data cost recovery initiatives, and provide recommendations for optimal implementation of cost recovery measures

#### 4.0 Training and Education Recommendations

GTG will develop an optimum GIS training and education plan for the City of West Sacramento. It will include:

- Training Regimen

GTG will describe the type, length, and magnitude of training required for the City of West Sacramento. It will include at a minimum of two options: 1) in-house and 2) vendor site training

#### 5.0 Education Strategy

GTG will develop a recommended strategy for GIS education. It will include multiple strategies for initial education and a strategy that will address the on-going commitment to GIS.

#### 6.0 Thematic Mapping / Map Book Solutions

#### 7.0 Detailed Description and Alternative Strategies for Designing, Converting, Maintaining and Editing GIS Data

GTG will develop a detailed recommendation for designing and maintaining maps and GIS data, including data development costs.

##### 7.1 Data Conversion, Conflation, and Creation Needs

##### 7.2 Database Design Recommendations

##### 7.3 Spatial Analysis and Departmental GIS Functionality Requirements

##### 7.4 Quality Control/Quality Assurance and Data Maintenance Recommendations

- GTG will develop a detailed recommendation for designing and maintaining maps and GIS data, including data development costs

#### 8.0 External Entities

GTG will recommend and document all external entities that offer data and services that would be useful to the City of West Sacramento. GTG will document local, regional, and state agencies, and existing structures and policies for data sharing, selling, user groups, and other GIS-related issues.

##### 8.1 Local, Regional, and State Agencies

#### 9.0 GIS Integration with Existing Systems Strategies

#### 10.0 Hardware Recommendations

GTG will recommend the optimum hardware configuration for short-term and long-term implementation strategies, including pricing structures.

##### 10.1 Short Term Strategy

##### 10.2 Long term Strategy

#### 11.0 Software Options & Recommendations

GTG will identify all potential GIS users within the City of West Sacramento. GTG will diagrammatically illustrate each recommended GIS user within the organization.

- A Three Tier Users Strategy Matrix

GTG will develop a matrix illustrating GIS users within The City of West Sacramento.

- Enterprise Strategy

GTG will describe the enterprise GIS solutions that were recommended for the City of West Sacramento. They may include but are not limited to: ArcGIS 8.3/9.0 (ArcInfo, ArcEditor, and ArcView), ArcSDE 8, ArcIMS 4, custom and enterprise-wide ArcObjects and MapObjects-based applications.

- Software Prices

12.0 Base Map Recommendations and Database Design Strategy

Using the "Needs Assessment" data prioritization matrix GTG will recommend solutions for base mapping, and design standards that address:

- Accuracy
- Content
- Quality
- Metadata Strategy

13.0 Optimum Networking Solutions and Recommendations

GTG will recommend optimum network solutions for the short term and long-term GIS implementation strategies.

14.0 Enterprise-Wide Geographic Information Systems (GIS) Design

Based on the "GIS Needs Assessment" GTG will develop a system design for the most feasible short-term recommended solution and the most feasible long-term GIS solution. This design will include an evaluation and description of optimum software, hardware, networking, and staffing solutions. This conceptual design will provide the basis for estimating the costs and benefits of implementing GIS.

15.0 Presentation of Recommended Alternative System Designs

GTG will identify alternative GIS implementation strategies.

**Phase III: Phased Implementation Plan**

1.0 Phased Implementation Plan of Selected Alternative

1.1 Phased Implementation/ Development Plan

- Year One Implementation
  - Schedule
  - Budget
  - Pilot Project Recommendations
- Year Two Implementation
  - Schedule
  - Budget
- Year Three Implementation
  - Schedule
  - Budget

1.2 Schedule

- Milestones
- Duration
- Strategic Needs
- Costs

2.0 Final GIS Implementation Plan Presentation

GTG will present the final GIS Implementation plan and deliver 10 bound copies of the document to the City of West Sacramento.







## Project Management

GTG's project manager is David Holdstock who will be responsible for the oversight of the contract and scope of work for the City of West Sacramento.

Contact: David A. Holdstock  
Geographic Technologies Group  
648 North Spence Avenue  
Goldsboro, NC 27534  
Tel. 888.757.4222  
Fax 919.759.0410  
[davidh@geotg.com](mailto:davidh@geotg.com)

Mr. David Holdstock has been working with GIS for state, federal, and local governments since 1985. David was the **GIS Cost Center Manager in Manhattan, New York, for the world's largest transportation engineering company, Parsons Brinckerhoff Quade & Douglas**. As PBQ&D's GIS Manager, David was responsible for the use and application of GIS technology in numerous Public Works Utilities, Engineering, transportation, planning, and environmental projects. David has also been the Geographic Information Systems/Global Positioning System (GPS) Director at North Carolina State University – Institute for Transportation Research and Education (ITRE). He established ITRE as one of the state's leading training and education centers for GIS and GPS. David managed and organized a very successful GIS training program and created a new GPS Trimble certified training center. David's role as Director allowed him to work with many local governments in the Carolinas on GIS/GPS projects in implementation, feasibility studies, software development, database creation, and spatial analysis. **Mr. Holdstock is the owner and founder of Geographic Technologies Group**, David has been responsible for numerous GIS implementation projects throughout the United States and beyond. He has provided GIS services to well over 50 towns, cities and county governments. **David is now under contract to write a book titled, "Implementing GIS and GPS Technology for Towns, Cities, and Counties"**.



## Litigations

GTG has not been subject to any lawsuits or litigations resulting from jobs undertaken the last five years.

# GIS



Enterprise-wide Solutions  
Towns, Cities, Counties  
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Strategy

Innovation

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