

California Multiple Award Schedule (CMAS)
REQUEST FOR OFFER
for
GPS-Geographic Information Systems
Installation of ESRI Software
November 14, 2005

You are invited to review and respond to this Request for Offer (RFO), entitled, Installation of ESRI Software. In submitting your RFO, you must comply with the instructions found herein. The services required are delineated in the Statement of Work.

Please read the enclosed document carefully. Responses to this RFO are due Friday, November 21, 2005.

A copy of this document can be viewed in .pdf form at the following web address:
http://www.documents.dgs.ca.gov/spi/GIS_RFO.pdf

E-mail your response to Bob Yoachum at Robert.Yoachum@DGS.ca.gov, followed by one hard copy, with original signature, postmarked no later than Friday, November 21, 2005 to:

Bob Yoachum
Staff Information Systems Analyst
Department of General Services
707 3rd Street, 4th Floor
West Sacramento, CA 95605

A. Background and Purpose of RFO for IT Consulting Services

The Department of General Services (DGS), Cost Engineering Section is in the process of creating an enterprising Geographic Information Systems (GIS) to enhance the business climate and to better serve Californians.

DGS consists of six divisions, 23 operational offices, 4,000 employees and a budget in excess of a half a billion dollars. Its diverse functions include e-commerce and telecommunications; acquisitions, design and construction, leasing, disposal and management for state properties; architectural approval of local schools and other state-responsibility buildings; printing services provided by the second largest government printing plant in the U.S.; procurement of supplies needed by state agencies; and maintenance of the vast fleet of state vehicles.

The overall objective of this project is to use GIS technology to improve the department's enterprise capabilities in providing consistent, timely, and accurate information relative to the wide variety of products and services delivered by DGS.

The initial phase of this project is to have the GIS architecture fully functional within the department. This will include, but not be limited to, the configuration, installation, and tuning of GIS software for the desktop (ESRI ArcGIS 9 ArcView, ESRI ArcGIS 9 ArcGIS Desktop), geodatabase(s) creation, application server (ESRI ArcGIS 9 ArcSDE) and web services (ESRI ArcGIS 9 ArcIMS); Tele Atlas Dynamap/2000 Street Network Files (ArcView and ArcSDE format), hardware data storage allocation and processing requirements within the network; user privileges and logon processes and versioning functions; establishment of "address" databases to geodatabase(s), and network security. An application server with specifications to function as the GIS ArcSDE application server has been built with the operating system, racked, and readied for the installation of software. This server is housed at the Ziggurat Building.

Thereafter, the objective will be to utilize the Statewide Property Inventory (SPI) database, located at the Department of Technology Services Data Center, as the "pilot" data set for the creation of layers, maps, metatables, etc. in order to "test" GIS to address a problem and provide an answer *geographically*. Once this success is achieved, an overall department plan will be implemented.

A summary of the scope of work is as follows:

- Provide recommendation on DBMS for the geodatabase (Oracle versus SQL) .
- Ensure that the recommended DBMS selected for the geodatabase is compatible with other DGS DBMS and their version(s).
- Ensure the proper installation of ESRI software and full functionality within the GIS and the network environment.
- Ensure the proper hardware requirement and system configuration.
- Ensure that the configuration, relationship, and installation are within DGS standards and policies.
- Ensure that network security is not weakened or left vulnerable.
- Provide database and network tuning as it relates to processing and storage space allocation.
- Ensure that GIS servers and web services are fully functional.
- Research and install patches that address system and software bugs.
- Establish and provide documentation as to how future enhancements and patches will be handled.
- Provide written system and user documentation including network configuration diagram and install/uninstall procedures. This must identify relationships to existing hardware and network.

Bids are to be based on the detailed scope of work included in the Statement of Work, Exhibit A.

B. Key Dates

All contractors are advised of the following schedule and will be expected to adhere to the required dates and times.

Event	Date
Release of RFO	11/14/2005
RFO Response Submission Due Date	12/02/2005
Proposed Notice of Award Date	12/09/2005
Proposed Contract Start Date	12/19/2005

C. Department Contacts

Any questions regarding this RFO should be directed to the following contact below:

Bob Yoachum (916) 375-4676

D. RFO Response Guidelines

Exhibit A – Statement of Work

The Contractor must submit a package titled “Contractor’s Response to RFO for “Installation of ESRI Software” with the following documents:

- (1) Describe how the Contractor will perform the tasks as identified in the Statement of Work, Exhibit A.
- (2) Provide resume(s) of the proposed staff person(s) meeting the experience level as identified in the Statement of Work, Exhibit A.
- (3) Provide customer references for the proposed consultant(s) from previous projects that are similar in nature to the scope identified in the Statement of Work, Exhibit A.

Exhibit B – Cost Worksheet

Contractor must complete the Cost Worksheet, Exhibit B.

- (1) Provide the staff’s hourly rate by Labor Level/Skill Category and map classifications to the tasks involved in completion of the deliverables specified.

Administrative Requirements

Contractor must provide a response to the following administrative requirements with the hard copy response only:

- (1) Copy of current certification as a small business and/or Disabled Veteran Business Enterprise (DVBE), if applicable.
- (2) Copy of the complete CMAS Contract. The complete copy consists of the following elements:
 - Cover page with Department of General Services (DGS) logo, contract term dates, and CMAS analyst’s signature.

- California Ordering Instructions and Special Provisions.
- California CMAS Terms and Conditions.
- Federal General Services Administration (GSA) schedule or non-federal GSA multiple award terms and conditions.
- Federal General Services Administration (GSA) schedule or non-federal GSA multiple award contract product, services, and prices.
- Payee Data Record (Std. 204).
- Drug-Free Workplace Certification.

E. Evaluation Process

Each offer received by DGS will be evaluated based on the following criteria:

POINT VALUE

- | | |
|-------|--|
| 1- 30 | Knowledge of and experience in Installing ESRI Software (provide details). |
| 1-10 | Knowledge of and experience in relational database management systems (provide details). |
| 1-10 | Resumes of proposed staffing – years and depth of experience. |
| 1-10 | Customer references – similarity of projects completed with the proposed work. |
| 1-10 | Proposed duration of schedule. |
| 1-10 | Proposed cost per hour. |
| 1-20 | Total proposed cost. |

Award will go to the contractor with the highest total point value.

Request for Offer
Information Technology Consulting Services
GPS-Geographic Information Systems
Installation of ESRI Software
Statement of Work
Exhibit A

1.0 Scope and Description

BACKGROUND

The Department of General Services (DGS), Cost Engineering Section is in the process of creating an enterprising Geographic Information Systems (GIS) to enhance the business climate and to better serve Californians.

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The overall objective of this project is to use GIS technology to improve the department's enterprise capabilities in providing consistent, timely, and accurate information relative to the wide variety of produces and services delivered by DGS.

The initial phase of this project is to have the GIS architecture fully functional within the department. This will include, but not be limited to, the configuration, installation, and tuning of GIS software for the desktop (ESRI ArcGIS 9 ArcView, ESRI ArcGIS 9 ArcGIS Desktop), geodatabase(s) creation, application server (ESRI ArcGIS 9 ArcSDE) and web services (ESRI ArcGIS 9 ArcIMS); Tele Atlas Dynamap/2000 Street Network Files (ArcView and ArcSDE format), hardware data storage allocation and processing requirements within the network; user privileges and logon processes and versioning functions; establishment of "address" databases to geodatabase(s), and network security. An application server with specifications to function as the GIS ArcSDE application server has been built with the operating system, racked, and readied for the installation of software. This server is house at the Ziggurat Building.

Thereafter, the objective will be to utilize the Statewide Property Inventory (SPI) database, located at the Department of Technology Services Data Center, as the "pilot" data set for the creation of layers, maps, metatables, etc. in order to "test" GIS to address a problem and provide an answer *geographically*. Once this success is achieved, an overall department plan will be implemented.

SCOPE OF THIS PROJECT

2.0 Business Objectives

DGS intends to accomplish the following objectives with the consultant's expertise:

- Establish a fully functional enterprising GIS within the existing network environment.

- Ensure that the installation and configuration of GIS software and components connectivity and functionality are in place to begin the SPI pilot.
- Document and provide knowledge transfer to DGS staff.

3.0 Technical Requirements

- At least five years experience in the design and implementation of large-scale, web-based applications.
- And at least five years experience in the following:
 1. Clear understanding and working knowledge/ functionality of GIS.
 2. Full understanding with IT network architecture and GIS architecture.
 3. Installation and upgrade of ESRI ArcGIS software (version 8 or higher).
 4. Trouble-shooting and maintenance of GIS software and hardware.
 5. GIS desktop/enterprise network and web services (version 8 or higher).
 6. Use of software to create GIS products with existing databases (version 8 or higher).
 7. Knowledge and understanding of Oracle Enterprise database application (Oracle 8i, 9i, 10g).
 8. Knowledge and understanding of SQL Server database application (SQL Enterprise 2000).

4.0 Tasks and Responsibilities of the Consultant

The following are major activities the Consultant must perform in this engagement:

- Perform architectural modeling to ensure consistency of the design and verification of the existing hardware for GIS within the DGS network.
- Work with DGS Office of Technology (OTR) staff to determine appropriate hardware placement on the network.
- Develop test plans for testing the system. Create a test environment to ensure GIS functionality prior to moving system into production.
- ArcSDE 9.1 Application Server
 1. Determine two-tiered versus three-tiered architecture.
 2. Install the ArcSDE software on the GIS application server.
 3. Recommend the appropriate DBMS for the geodatabase (Oracle versus SQL).
 4. Working with DGS Database Administrators, create an instance on the SDE application server.
 5. Working with DGS Database Administrators, provide database and network tuning as it is related to processing and data storage space allocation, in keeping within DGS standards.
 6. Create ArcSDE Application Servers - must be configured and tuned for whichever DBMS selected to store data:
 - The Home Directory (SDEHOME) – defined by the system variable that stores its location. Update the server's configuration files to reflect the unique properties of the new application server.
 - The ArcSDE DBMS administration account.
 - Verify the ArcSDE service.
 - Monitor the ArcSDE service:
 - The giomgr process – process listens for user application connection request spawns gsvr processes and cleans up disconnected user processes.

- The gsrvr process – communicates with the database on behalf of the connected application; responds to the application’s query and edit requests to the database.
 - Work with OTR Network Administrators to establish the Transmission Control Protocol/Internet Protocol (TCP/IP) service name and port number – required in order for the ArcSDE application server to listen for the application connection requests, through the giomgr process.
 - The configuration parameters (SDE.SERVER_CONFIG metadata table) – optimize the data flow between the connected applications and the database.
 - Depending on the server operating system, register, verify, and monitor the ArcSDE service.
 - Work with OTR Network Administrators to specify the domain name server and TCP/IP port number.
7. Configure ArcSDE Application Server
- The services.sde file.
 - ArcSDE DBMS environment variables – dbinit.sde file and application server.
 - ArcSDE system environment variables – approximately 16 count.
 - The dbinit.sde file format.
 - Displaying ArcSDE system environment variables.
 - Adjusting Arc SDE application server initialization parameters.
 - Displaying the ArcSDE initialization parameters and verify.
8. Manage the set-up of ArcSDE Application Servers
- Before starting the ArcSDE server, the following conditions must be met:
 - a) The database management instance must be started.
 - b) The DBMS sde user account must exist.
 - c) The system environment must be set such that the ArcSDE application server can connect to the DBMS as the sde user.
 - d) The ArcSDE home directory must exist.
 - e) An ArcSDE server license must have been installed.
 - Ensure the proper starting of the local ArcSDE Application Server on Windows via the Services menu and verify that the service name itself is enclosed in parentheses.
 - Ensure proper remote network connection by using the ping command.
 - Ensure the proper starting of a remote ArcSDE Application Server on Windows.
 - Ensure that the ArcSDE administrator belongs to the Windows administrator or power user group on the remote machine and have access via the system’s environment variables to the sdemon command:
 - a) Verify correct sdemon command output during startup.
 - If not using a Windows environment, ensure the proper local and remote ArcSDE start process to the appropriate environment:
 - a) Verify correct sdemon command output during startup.
 - Ensure proper ArcSDE application server functions for:
 - a) Pausing
 - b) Resuming operations
 - c) Shutting down
 - d) Shutting down a stalled giomgr process on Windows or appropriate environment
 - Test the conditions that occur when shutting down an ArcSDE application server during the editing of the multi-versioned table:
 - a) All unsaved edit sessions are rolled back and lost.
 - b) Versions being reconciled continue to reference the initial state of the database that existed prior to the start of a reconciled edit session.
 - c) Posted versions are not affected.

- d) Any non-referenced, orphaned stated created as a result of the shutdown is removed the next time the database is compressed.
 - Test the removal of ArcSDE sessions:
 - a) Removing a single ArcSDE user session.
 - b) Removing multiple ArcSDE user sessions.
- 9. Monitor ArcSDE Application Servers (Set-Up for Post Implementation)
 - Display ArcSDE application server status and lock table information:
 - a) Document how ArcGIS uses ArcSDE locking.
 - Display ArcSDE application server statistics.
 - Display ArcSDE user session information.
- 10. Troubleshoot the ArcSDE Application Server
 - Display ArcSDE user session information. Verify the startup process of an ArcSDE application:
 - a) The ArcSDE application starts the giomgr process.
 - b) The giomgr reads the system environment variables from the dbinit.sde file.
 - c) The giomgr determines if an ArcSDE server license has been installed.
 - d) The giomgr reads the Transmission Control Protocol/Internet Protocol (TCP/IP) service name.
 - e) The giomgr attaches to the TCP/IP port assigned to the service name.
 - f) The giomgr connects to the DBMS using connection information from dbinit.sde and operating system environment variables.
 - g) The giomgr flushes the lock tables.
 - h) The giomgr listened for connections on its TCP/IP port.
 - Verify that when an ArcSDE client connects to an application server:
 - a) The giomgr process listens for connections on its TCP/IP port.
 - b) Applications submit connection requests to the ArcSDE application server.
 - c) The giomgr compares the application computer's clock time with its host's clock time.
 - d) The giomgr compares the application's client ArcSDE release with the ArcSDE application server's release.
 - e) The giomgr process starts a gsvr process that will serve the application.
 - f) The gsvr process attaches to shared memory.
 - g) The gsvr process connects to the DBMS.
 - h) The giomgr process attaches the application to the gsvr process.
 - Verify when an ArcSDE client direct connects to the DBMS:
 - a) The DBMS server listens for local or remote connections.
 - b) Make sure the ArcSDE server license has been installed.
 - Resolve ArcSDE server startup problems.
 - Set the Windows SharedSection.
 - Verify the Windows Event Viewer function.
 - Examine the ArcSDE error logfiles.
 - Set the relevant variables for ArcSDE intercept, if appropriate.
 - Set the relevant variables for ArcSDE tracing, if appropriate.
- 11. Verify ArcSDE DATA DICTIONARY
 - ArcSDE System Tables.
 - Geodatabase System tables.
 - Business tables.
 - Binary Schema Implementation: the database trigger.
 - Feature table F<layer_id>.
 - Spatial index table S<layer_id>.
 - Spatial types and functions schema.
 - Logical network tables.
 - Topology Error Tables.

- Logfile Tables – contains the logfile metadata.
- Version Tables (“adds” table).
- Raster Tables.
- Geocoding Index Tables GC_SZS<id#>

12. Ensure Functionality of ArcSDE Application Server Command

- command listing
- Command syntax
- Getting help”
- ArcSDE administration commands.

13. Provide written install/uninstall procedures, and written system and user documentation for ArcSDE as outlined above.

- Tele Atlas Dynamap/2000 Street (v 15.1) Network files - for ArcSDE

CA Dept. of General Services

1. Install media as directed (TANA/Product Documentation).

2. Provide written install/uninstall procedures.

- ArcGIS 9.1 – ArcIMS

1. Understand and apply the ArcIMS architecture and components:

- Web Service, Java Runtime Environment, and Servlet Engine.
- ArcIMS Connectors
- ArcIMS Software
- ArcIMS Application Server, Viewers & Clients
- ArcIMS Spatial Server, ArcMap, ArcExplorer, Metadata Explorer
- ArcIMS Services Types and Organize layers into services.
- Instances and Virtual Servers-
 - a) Spatial Server function types.
 - b) Virtual Server types.
- ArcIMS Directories and File Locations
 - a) < ArcIMS Installation Directory>/arcims
 - b) ArcIMS Web site directory

2. Install the ArcIMS software

- Collect the following information for the environment:
 - a) Operating system
 - b) Web Server
 - c) Servlet engine
 - d) Available disk space
 - e) ArcIMS registration number(s)
- Ensure that the hardware matches the system requirements for all of the ArcIMS components via the ESRI (<http://support.esri.com>), Knowledge Base, System Requirements.
- Install a Web server supported by ArcIMS and a servlet engine, if appropriate.
- Work with OTR Network Administrators to configure the web server and servlet engine to work together:
 - a) Ensure that the Web server and servlet engine are communicating.
- Install the ArcIMS software from CD:
 - a) Ensure administrator privileges (MS Windows)
 - b) Do not install ArcIMS as a super user (UNIX)
- Complete the post installation for ArcIMS:
 - a) Register the ArcIMS product with ESRI
- Configure ArcIMS for the environment, including configuring communication among the Web Server, Servlet Engine, and ArcIMS:
 - a) Test the ArcIMS installation
- Install the ESRI Software Documentation Library

3. Start ArcIMS

- Test each start up and perform the task associated with each one:

Start up	Task
Author	To add map content (create a configuration file)
Designer	To design a Web site
Administrator	To manage services, servers, and folders
Service Administrator	To manage an ArcIMS Web site remotely
Viewer, client, or custom client	To view and test site

- View the site (URL) via web browser to ensure correctness.

4. Provide written install/uninstall procedures, and written system and user documentation for ArcIMS.

• ArcGIS 9 – ArcGIS Desktop

1. Install ESRI Arc GIS 9.1 Desktop software and ensure proper functionality the GIS software and within the network environment.

- Software installation:

- Obtain hardware key and code from DGS/Cost Engineering Section staff.
- Connect hardware key to workstation prior to installation.
- Install ArcGIS Desktop software.
- Install ESRI license manager on workstation.
- Install the ArcInfo Workstation software.
- Install:

ESRI Software Documentation Library
ArcGIS Desktop Developer Kit
Crystal Reports for ESRI
ArcReader
ArcGIS Desktop Tutorial Data

2. Ensure full functionality on workstation.

3. Test the connectivity of the workstation within the GIS network.

4. Provide written install/uninstall procedures, and written system and user documentation.

• ArcGIS 9 – ArcGIS ArcView

1. Software installation and full functionality on workstation.

- Installation of:

- ESRI Software Documentation Library
- ArcGIS Desktop Developer Kit
- Crystal Reports for ESRI
- ArcReader
- ArcGIS Desktop Tutorial Data

2. Test the connectivity of the workstation within the GIS network.

3. Provide written install/uninstall procedures, and written system and user documentation.

• Tele Atlas Dynamap 2000/ Street Network files (for ArcView)

1. Install media as directed (TANA/Product Documentation).

2. Provide written install/uninstall procedures.

• GIS Network

1. Working with DGS staff:

- Test for connectivity and functionality from all aspects and locations.
- Provide written maintenance schedule documentation.
- Provide written database tuning documentation.
- Provide written system and user documentation.

2. Ensure (geodatabases and “address”) DBMS versions are compatible with other versions.

3. Research and install patches that address system and software issues.

4. Develop post-implementation plan for monitoring/tracking architecture.

5.0 Deliverables

The Consultant will be responsible for delivering the following items to the State during this engagement:

1. Determine and implement the correct type of tiered GIS architecture to best fit the business requirements, current network environment, and security environment.
 2. Ensure the proper hardware requirement and system configuration.
 3. Install ESRI software (ArcSDE, ArcIMS, ArcGIS Desktop, ArcView), Tele Atlas files (for ArcSDE and ArcView), and related software on hardware components to ensure full functionality of GIS.
 4. Recommend the DBMS for the geodatabase(s) (Oracle versus SQL) and work with DGS Database Administrators to create the instance(s) on the server.
 5. Work with DGS Network Administrators to configure servers and tune the databases to create the best data storage capacity, network connectivity and performance of the GIS and existing network. Must be in conjunction with DGS standards and policies.
 6. Work with DGS Network Administrators to resolve any GIS and network issues that may occur including connectivity, performance and security.
 7. Ensure that user rights and logon processes for users are in place and fully functional.
 8. Provide documentation/proof of the completion of each task as outlined in section 4.0.
-
9. Transfer knowledge to DGS staff.
 10. Provide a diagram that identifies the configuration between the GIS application hardware, web and database hardware, as well as a network diagram of the new GIS architecture within the existing network configuration. Entity Relationship Diagram (ERD) should include all elements from input to output devices/applications.
 11. Provide written software install/uninstall procedures, and written system and user documentation.

6.0 Place and Time of Performance

Department of General Services
Office of Technology Resources, in conjunction with
RESD/Professional Services Branch/ Cost Engineering Section
The Ziggurat Building
707 3rd Street
West Sacramento, CA 95695

Work to be performed Monday through Friday, 7:30 a.m. to 5:00 p.m. (excluding holidays).

7.0 State Responsibilities

- The State will provide onsite access to servers and workstations for project work only. Use of these servers and workstations for non contract related purposes is prohibited.
- Telephones will be provided for internal state use and local phone calls. Exceptions will be project related calls made to ESRI and Tele Atlas Corporations.
- Internet access will be provided for project related research at web sites such as ESRI.
- The State is responsible for providing required information, data, documentation, and test data to facilitate the Contractor's performance of the work, and will provide such additional assistance and services as in specifically set forth in the Statement of Work, Exhibit A.

8.0 Contractor's Responsibilities

- Compliance with building security check-in procedures.
- Encourage collaboration during the technical requirements gathering, design, development, and implementation of the system.
- Ensure coordination during the execution of phases.
- Optimize user involvement throughout the life of the project.
- Provide a high level of business and technical analyst expertise, maximizing the quality of requirements.
- Promote and maintain project communications at all levels.
- All costs for travel, incidental costs, per diem, and parking.
- Practice confidentiality of sensitive information including knowledge gained from this project that can impact the security of State Government and network infrastructure.
- Work in accordance with State and DGS policies, procedures, and standards.
- Work with DGS staff.

9.0 Acceptance Criteria

Contractor will perform assigned tasks as described in Section 4 above, within scheduled time frames and at an acceptable quality of service. Contractor will deliver the work products outlined in Section 5 above.

10.0 Budget Detail and Payment Provisions

A. Invoicing and Payment :

For services satisfactorily rendered and upon receipt and approval of Contractor invoices, DGS agrees to compensate the Contractor in two equal payments for services provided in accordance with the deliverables on Exhibit B, Cost Worksheet (as detailed in Section 5 above) less 10% retention to be paid upon satisfactory completion of the entire project. Invoices shall include supporting timesheets.

All invoices submitted by the Contractor must identify the Purchase Order number. Any invoices submitted without the above referenced information may be returned to the Contractor for reprocessing.

B. Budget Contingency Clause:

It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program; this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to Contractor or to furnish any other considerations under this Agreement and Contractor shall not be obligated to perform any provisions of this Agreement.

If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to Contractor to reflect the reduced amount.

C. Prompt Payment Clause:

Payment will be made in accordance with and within the time specified in Government Code, Chapter 45 (commencing with Section 927).

11.0 Performance Period

Period not to exceed June 30, 2006; however, continuance of the contract is at the discretion of the State.

Request for Offer
 GPS-Geographic Information Systems
 Installation of ESRI Software

Exhibit B - Cost Worksheet

Labor Level Skill Category	Hours	Rate	Total	Tasks Required	Deliverables
			\$		Statement of Work, Exhibit A, Section 5.0 Deliverables, Item 1 thru 8. Complete installation and testing of all ESRI software, network configuration with full functionality, geodatabase instance creation with DBMS tuning, and calculated data storage allocation.
			\$		Statement of Work, Exhibit A, Section 5.0 Deliverables, Item 9 thru 11. Network diagram with written install/uninstall procedures, and written system and user documentation.
TOTAL			\$		