County of Los Angeles

Enterprise Geographic Information Systems (eGIS)

2009-2012 Strategic Plan

August 24, 2009

ENTEPRISE GIS STRATEGIC PLAN CONTENTS

BACKGROUND

Geographic Information Systems (GIS) technologies are critical tools for improving the quality, accuracy, efficiency, and responsiveness of government services provided by the County of Los Angeles. Using the concept of an "electronic" or digital map, GIS records, stores, and analyzes multiple layers of spatial data and relates this data to locations of interest (e.g., communities, neighborhoods and people that live there). These layers contain data in the form of points (e.g., addresses, locations, etc.), lines (e.g., streets, highways, etc.), polygons (e.g., areas, political jurisdictions, etc.) and images that can be viewed in various combinations to identify and display underlying spatial relationships.

VISION

A countywide enterprise approach to GIS will optimize the efficiency and effectiveness in the use, acquisition, and dissemination of GIS data and resources. This will increase the cost-effectiveness, innovation, reliability, accuracy, and value of geospatial information and tools, leading to improved outcomes and enhanced services to the public.

MISSION

- Develop mutually accepted standards, policies, and business practices;

- Communicate the value of GIS to County departments and agencies;

- Encourage collaborative GIS efforts among County, government, and related organizations;

- Ensure that GIS resources are available for day-to-day operations;

- Maximize the cost-effectiveness of GIS investments;

- Cultivate the advanced use of GIS;

- Pursue the innovative use of GIS and related technologies;

- Integrate GIS technologies into County business operations;

- Support emergency and disaster planning, response, and recovery.

STRATEGIES

	Objectives	Strategies and Tactics	Notes
		1. GEOSPATIAL DATA MUST BE CREATED, DOCUMENTED, AND MAINTAINED TO MEET OR EXCEED NATIONAL, STATE, AND COUNTY STANDARDS.	
A	Identify and implement data collection, metadata, and spatial accuracy standards and policies.	Implement Metadata standards	FGDC Metadata Standards
		Implement Field Survey Data Standards (horizontal and vertical)	Need clarification
		Implement Address standard	**CAMS established County address standard**
		Implement spatial accuracy standards for street based, parcel based, or survey [cadastral] based GIS data layers	ASPRS standards, MAD Codes (LAR-IAC is one example)
B	Develop and Implement quality assurance procedures for GIS data to ensure identified standards are followed.	Develop and implement quality assurance mechanisms to test and ensure that metadata follows standards	• Metadata identified for all layers • Develop Metadata style sheets that will contain all necessary information • ESRI's metadata server tests to ensure minimum information is included
		Host data editor meetings regularly	
C	Identify data layers to include in the Enterprise GIS	Develop a list of data layers. Develop an ongoing survey for County departments to identify new data layer needs.	Data committee established to undertake this
		Leverage federal and state framework data layer listings to obtain a list of data layers that should be available to county departments	
		Create and maintain a list of data layers stored in the Enterprise GIS Repository	Ensure that source, ownership, and update responsibilities are stored
D	Create or acquire datasets as necessary	Undertake projects to create data when necessary (CAMS)	CAMS (address points) is one example
		Undertake projects to purchase data when necessary (LAR-IAC, Thomas Brothers, businesses)	LAR-IAC is one example
E	Identify required resources for geospatial data maintenance. Ensure required resources are allocated. Identify ownership and maintenance responsibility for data layers	Assign data layers to owners for maintenance	
		Maintain information about frequency of data updates, the importance of data updates, and the last date updated	
F	Ensure data layers are based on a common base layer(s) – for cartographic and analytical purposes	Move GIS data to the parcel level for increased accuracy (where appropriate)	Supervisorial Districts, city boundaries, etc.
		Determine priority and order in which to migrate data layers to parcel level	
		Maintain data at the parcel accuracy level	
G	Distribute County GIS data as widely as possible to ensure reduced duplication of effort	Create a central web-based location where GIS data can be made available for download.	
		Where possible make data available for free.	

Objectives		Strategies and Tactics	Status
	2. ENSURE THAT THE COUNTY'S GIS SYSTEMS ARE AVAILABLE FOR DAY-TO-DAY COUNTY/REGIONAL PURPOSES		
A	Identify GIS development standards and best practices	Develop GIS web services and applications utilizing OGC, W3C, DHS, and other standards where relevant.	
B	Identify Data Storage Standards	Identify spatial database technology standards for data storage.	
		Purchase and maintain a SAN server for long-term data storage	
C	Identify mechanisms to view and access GIS Data	Desktop GIS, Web-based GIS, Mobile GIS, Developer APIs and frameworks (SDKs)	ESRI defined as a county standard
		Develop mechanism to access GIS files (internal and external)	
		Develop and document Web Services and directories (UDDI) to provide access to GIS capabilities.	Applications Development Working Group
		Implement FTP (File Transfer Protocol) downloads of GIS data and software.	
		Create GeoRSS feeds of County GIS data for wider distribution.	
		Make sure the system architecture supports internal and external applications.	
D	Establish county GIS portal	Create the http://gis.lacounty.gov web site to provide a central entry for county GIS	
		Implement access control on the portal.	
		Link(s) to GIS sites and projects of all County departments	
		Link(s) to training - resources for County GIS users and professionals	
		Link(s) to data and software download locations.	
E	Develop data access control and security standards	Password enable servers, map services, etc	
		Determine security for each data layer in the eGIS Repository	Ensure licensed data (i.e. LAR-IAC) is only available to licensees.
		Ensure HIPAA compliance for sensitive GIS data layers.	
F	Develop a standard level of service at the Enterprise GIS to ensure availability of GIS data and systems	Document GIS System configuration/hardware.	
		Develop and implement plan to have development, test, and production environments for Enterprise GIS services and applications.	
		Meet with GIS System Administrators and relevant ISD sections on a regular basis to ensure ISD understands GIS system requirements.	Meet every 3 months
		Define & document requirements for security, technical support, response time, uptime, help desk support, backup and disaster recovery.	
H	Monitor usage of GIS software, hardware and applications to ensure allocation of sufficient resources for current and planned usage	Monitor ArcGIS license consumption. Activate and upgrade licenses as necessary.	
		Design metrics to evaluate usage of GIS systems to support system and budget planning.	
		Define software purchase requirements to meet defined goals.	
		Regularly monitor and report on Web and application statistics	Geocortex Statistics, Optimizer

		Design GIS applications so that metrics exist for availability/usage of apps and user information capture (if possible).	
		Monitor use and availability statistics on GIS applications and software.	Geocortex UpTime, Optimizer
I	Ensure cost effectiveness of all GIS usage and solutions (e.g. - obtain least expensive license)	Coordinate purchases with other agencies and jurisdictions to achieve cost savings.	
		Implement web-based GIS toolsets for Countywide use.	Latitude Geographics products.
		Complete ESRI Master Purchase Agreement to reduce software purchasing costs.	ESRI MPA
		Upgrade unused licenses instead of purchasing new licenses	
		Investigate the feasibility of an ESRI Enterprise License Agreement.	

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3. CULTIVATE THE ADVANCED / ANALYTICAL USE OF GIS		
A Inform GIS users of agencies successes in utilizing advanced analytical tools of GIS	Publish GIS related articles in county publications.	
	Prepare case studies showing the advanced/analytical use of GIS.	
	Encourage and assist County agencies to apply for productivity awards on GIS related projects.	
	Justify how GIS aligns with and supports the goals of the County Strategic Plan.	
B Develop and teach GIS courses to foster advanced usage of GIS in activities	Develop in-house GIS Training classes (ESRI-certified instructor) where possible	
	Purchase online GIS Computer Based Training for LA County Departments to share	
	Internal County Knowledge Exchange – Develop periodical "how-to" training sessions on GIS tools, data, and analysis, etc	
	Work with local colleges and universities to offer GIS classes and degrees needed by the different County Departments for County positions.	
	Develop County GIS User Group to support informal exchange of GIS expertise.	
	Encourage informal departmental GIS meetings (brown-bags) to spread GIS expertise.	
C Foster attendance at conferences and other outside training opportunities to advance users skills	Maintain list of GIS conferences and promote via email, websites, publications, and user groups.	
	Develop language to communicate the value of conferences to management.	
	Purchase ESRI User Conference Proceedings CD/DVD	
D Develop and maintain applications and services to simplify the advanced/analytical use of GIS	Develop commonly used web services for GIS application development	Application Developer Working Group
	Develop models and procedures/scripts to automate GIS processes	
	Distribute and share models via ArcGIS Server or other technologies.	
	Encourage the use of application development frameworks (APIs/SDKs/ESRI/Geocortex)	Application Developer Working Group
E Develop a GIS classification series to support the recruitment and retention of GIS expertise	Work with CEO Compensation to create a single unified GIS series for countywide GIS staff.	
	Work with local colleges and universities to develop curriculum relevant to LA County.	
	Develop GIS internship program.	
F Pursue and evaluate new technologies and data formats to enhance GIS use-ability and value.	Investigate approaches to moving to 3-D world (3D printer, 3D visualization, buildings, etc).	
	Evaluate and apply the different applications, usages, and value of mobile GIS.	
	Evaluate and integrate GIS technologies, web services, etc with different technologies to enable more dynamic features and capabilities (Cognos SpotOn, APEX, .NET, etc)	Application Developer Working Group
	Investigate Open Source GIS software.	
	Investigate integration of Web 2.0 technologies with GIS.	

		Investigate GIS enhancements to existing County Systems (Cognos, SQL Server, …)	
G	Create and collect Countywide knowledge-base, geoprocessing models, code base, methods, etc (standards and procedures, tutorials, and "how-to" for certain GIS analyses and processes).	Develop central GIS code base to promote re-use, sharing, efficiency, and collaboration.	
		Develop cartographic standards and models	
		Develop tutorials and "how-to's" for complex GIS analyses and processes	

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	4. RAISE THE AWARENESS OF GIS		
A	Regularly inform current and potential users of GIS activities, system status, resources, etc.	Publish GIS related articles in county publications	
		Publish quarterly newsletter highlighting GIS activities in the County.	
		Publish information about GIS activities in the eGIS blog.	
		Develop and publish GIS case studies showing the benefits of GIS.	
B	Coordinate/participate in regional GIS meetings and activities to maintain knowledge of GIS activities relevant to existing/future applications	Attend local and regional government sponsored GIS User Groups, when topics directly impact the County or merit the County's presence.	
		Acquire information about GIS in other agencies around the County	
		Support and attend Regional GIS meetings	
		Meet with Federal and State GIS representatives when appropriate.	
		Work with other jurisdictions' GIS staff on technical/data issues as appropriate (e.g., centerlines).	
		Monitor legislative and regulatory issues that could affect GIS.	
C	Provide training on basic use of GIS and its capabilities	Assess County GIS training needs as they relate to audience, frequency, format, and content	
		Document standard connection information to GIS Repository for training classes.	
		Promote County GIS training classes.	
		Develop 1 hour ("what is GIS") training for managers	
D	Conduct, and participate in, special events	Organize and publicize annual GIS Day event.	
		Develop and provide special presentations to groups/agencies as requested	
		Staff events/meetings as requested	
		Plan/Participate in County awareness events	
E	Present papers and participate at conferences and events where they will share information with key local, regional, national audiences	Support participation in local, regional and national GIS conferences and events	
		Write papers and/or make presentations at conferences, or document the value and reason for going.	
		Apply for awards wherever possible.	
		Post papers written by county staff on websites.	
F	Provide GIS tools for public and non-technical users.	Implement GIS components on the County portal and other web sites.	
		Integrate County portal and eGIS website – add GIS page to the County portal.	
		Develop and maintain a list of static maps (in electronic format) available for download and/or purchase.	
		Develop "Map-It" link for facilities to be mapped.	
G	Build staff level understanding of, and support for, GIS	Identify and present to senior level committees (i.e. TSAB, eGAC, Admin Deputies, Board Deputies) to educate members on GIS capabilities, strategies, and plans.	
		Establish mechanism within County GIS community to gather and share information on opportunities (e.g., info on grants, etc through user meetings, interviews, teams, ops)	

H	Increase general public knowledge of GIS resources and capabilities	Publicize new applications	
		Maintain library of resources and applications on eGIS portal.	
		Establish pricing scheme for data subscription service.	
I	Increase agency support and staffing of GIS	Work with County departments that are consistently using large amount of GIS project support and do not have their own GIS staff – to internalize that work.	

Objectives	Strategies and Tactics	Status

5. SUPPORT AND DELIVERY OF GIS PRODUCTS & SERVICES

	Objectives	Strategies and Tactics	Status
A	Improve technical support by working closely with GIS experts and the user community	Work with members of the eGIS Steering Committee to provide technical assistance	
		Publish and maintain list of FAQ's that detail problems and resolutions (internal)	
		Maintain a list of GIS applications and/or services available to County staff (by application, by department and/or by function)	Some of this on the eGIS Site (needs to be updated)
		Establish notification system for system outages (planned or otherwise) – for applications and underlying databases (or servers)	ISD is doing this already
B	Develop internal databases, applications, and processes to improve customer service	Coordinate with department specific applications and databases as well as the work done by ISD Urban Research	This is necessary to reduce duplication of efforts
		Develop a ISD GIS service request form(s) and procedures	
		Develop a Service Level Agreement (SLA) with all eGIS participating departments	
C	Maximize use of the web to deliver GIS products and services (related to Goals 2 C and 3D)	Update the County portal, eGIS Blog site, and department websites where appropriate to increase information dissemination	Make GIS more prominent; provide back end GIS to provide query results
		Establish procedures and create disclaimer language for GIS data download pages.	Public Works and Regional Planning have these pages; Assessor has a link to data for sale.
		Coordinate with other County committees (TSAB, EGAC, ISAB) regarding other IT/Web initiatives	
D	Provide appropriate staff with the skills and resources necessary to provide support.	Train all appropriate GIS analysts and users (related to Goal 4, C)	
		Maintain contact list of departmental GIS leads (that details their areas of expertise, department and schedule/availability).	This would help for GIS emergency volunteer corps as well.
		Provide support staff with training on custom and off the shelf applications and system functions (e.g: GIS-NET, PSRS, CAMS, PAIS, ViewLA, etc.)	
E	Create and implement a maintenance strategy for GIS applications.	Review existing applications, data content, and functionality before developing new applications.	Department (application) specific really
		Develop maintenance strategy for application upgrades.	
		Maintain list of application, hardware, and data dependencies where applicable.	

Objectives	Strategies and Tactics	Status
6. ASSIST AGENCIES TO INTEGRATE SPATIAL TECHNOLOGY INTO THEIR BUSINESS PROCESSES AND APPLICATIONS.		
A Provide the ability to replace existing static maps on the County's inter/intranet site with dynamic web maps.	Develop GIS application architecture that allows for easily integrating map services into existing Web pages.	
	Support agency development of dynamic, interactive web maps as opposed to static maps provided the agency is taking the lead.	
B Develop and implement a methodology for responding to agency requests to incorporate GIS into their business process.	Write and implement the methodology.	
	Maintain special projects database for managing projects	
	Document procedures for processing special project requests	
	Establish mechanism within GIS office to gather, document and share information on opportunities to incorporate GIS in county processes (e.g., through user meetings, interviews, teams, ops)	
C Provide support and tools to integrate GIS into applications.	Aid agencies in identifying workflow processes that currently do spatial analysis without the aid of GIS.	
	Support the implementation of address validation into business applications	
	Involve other agency GIS and programming staff in the GIS application planning and design process.	
D Assist in acquiring resources to implement or enhance spatial capabilities.	Work with agency senior staff to identify candidate projects and assist them in submitting proposals.	
	Work with agency staff to identify small budget, high return projects to be funded out of eGIS funds.	
	Participate in advisory committees as needed (selection and technical).	
	Assist agencies in establishing positions that include GIS.	
	Serve on interview panels as requested for GIS positions in other agencies.	
	Assist agencies in preparing proposals that include GIS related work.	
E Develop and implement processes and procedures to minimize spatial data redundancy	Revise GIS business process to obtain planned updates of addresses and incorporate them into CAMS (Countywide Address Management System).	
	Identify and implement all attributes and geographies necessary to support applications and agencies.	
	Maintain / run a stakeholders group for countywide addresses.	
	Establish and maintain one address source (CAMS)	
	Consolidate redundant data sets (e.g, airports, political jurisdictions)	
	Clearinghouse for GIS related support materials (RFPs, contracts, grants, awards, Statements of Work, etc)	

Objectives		Strategies and Tactics	Status
7. SUPPORT EMERGENCY PLANNING, RESPONSE, AND RECOVERY			
A	Develop standard operating procedures for GIS in emergency response.	Develop policies and procedures to provide GIS support to the County in the event of a disaster.	
		Ensure the policies and procedures are consistent with Countywide standards.	
		Develop a mechanism for non-emergency support departments to provide GIS expertise to LA County CEOC/Lead Departments in times of disaster.	
		Develop lists of staff in each department capable of using GIS, their expertise, and their work/home locations.	Add question to DSW survey.
		Maintain master resource guide of existing GIS data, servers, software, and equipment.	
		Compile user guides for existing software, equipment (plotter, scanner, GPS units), and applications.	
B	Ensure availability of GIS data and resources during disasters and emergencies.	Identify disaster recovery locations to provide access to GIS data and resources during disasters.	LRC, EOC
		Inventory GIS resources available at the disaster recovery locations.	
		Coordinate with ISD's Disaster Recovery Section to ensure GIS is included in their policies and procedures.	
		Ensure that GIS software, data, services, and applications are the same version at disaster recovery locations. (GeoCortex, CAMS, other web applications, license manager).	
		Establish schedule for system replication to the disaster recovery locations.	
		Conduct regular testing or use of data, software, and equipment.	
C	Keep all departmental Emergency Response programs abreast of county GIS capabilities.	Maintain a list of departmental Emergency Response program directors.	
		Schedule periodic meetings with departmental directors to inform them of GIS capabilities in emergencies.	
		Inform Emergency GIS staff of alternate access mechanisms.	
D	Participate in Emergency Exercises and Trainings to ensure staff are up to date.	Participate in Emergency Response Exercises and Trainings, as necessary.	
E	Coordinate planning and response strategies with other local, state, and federal agencies	Develop relationships with FEMA, Cal EMA, Federal DHS, JRIC, CEO Office of Emergency Management, Sheriff Emergency Operations Bureau, and other relevant Federal, State, Regional, or local groups as necessary.	