



County of Lassen
Department of Planning and Building Services

• Planning • Building • Environmental Health • Code Enforcement • Surveyor • Surface Mining

March 15, 2024

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TO: Lassen County Board of Supervisors
 Agenda Date: March 26, 2024

Zoning and Building
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FROM: Maurice L. Anderson, Director

SUBJECT: Review the Lassen County Geographic Information System (GIS) Strategic Plan developed by the County's consultant, Geographic Technologies Group.

ACTION REQUESTED:

1. Receive report; and
2. Provide direction.

The Executive Summary of the Geographic Information System (GIS) Strategic Plan prepared by the County's consultant, Geographic Technologies Group, is attached.

The complete GIS Strategic Plan is available on the Planning and Building Services Department's portion of the County website, under the "News" tab, at the following URL:

<https://www.lassencounty.org/government/news/planning-and-building-services>



GIS Strategic Plan Executive Summary

Lassen County | CA

March 2024



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Project Overview

Lassen County, California, engaged Geographic Technologies Group, Inc.® (GTG) to prepare a Geographic Information System (GIS) Strategy to develop a **GIS strategic implementation and business roadmap for geospatial technology and location intelligence** to build a strategic, enterprise, scalable, sustainable, and enduring GIS program for the County.

Project Goals and Objectives

- ◆ Document the **status of the current GIS program**.
- ◆ Determine the **direction of GIS for the County** based on comparable jurisdictions.
- ◆ Develop **short and long-term steps and processes** to bring the County closer to **meeting its GIS objectives**.
- ◆ Establish processes for **maintaining current and future GIS data**.
- ◆ **Evaluate staffing and training needs** to support current and future GIS needs and prepare a phased **plan and budget**.

Project Tasks

The project consisted of three phases and seven tasks:

- ◆ **Phase I: GIS Needs Assessment** included four tasks to assess current conditions via online questionnaires, departmental interviews, benchmarking, and gap analysis.
- ◆ **Phase II: Conceptual Alternatives System Design** included one task to develop a system-level design to address the County's geospatial requirements.
- ◆ **Phase III: Strategic Implementation Plan** summarized the results of the previous two phases in a phased implementation plan with prioritized tasks and estimated costs.

Phase I: GIS Needs Assessment

The Six Pillars of GIS Sustainability

GTG used its philosophy known as the Six GIS Pillars of GIS Sustainability to determine the current status of the Lassen County's GIS program. These pillars are the major components that must be planned for and work well to have an effective, successful, enterprise GIS program. Any pillar that is weak poses a risk to the stability of the entire GIS program.



Benchmarking and Gap Analysis Summary

The Benchmarking Analysis (BA) establishes Lassen's baseline of geospatial capabilities. Any item scoring 60% or below is considered a gap and can be considered an area of opportunity for improvement. The resulting list of gaps are KPIs that serve as the basis for ongoing performance measurement, reporting, and management of the enterprise GIS.

In August 2023, GTG interviewed the Deputy Director of Planning and Building Services, Natural Resources Coordinator, and Information Services Supervisor to determine benchmark scores of 105 benchmarking metrics. The average Benchmarking Summary Scores for the Six Pillars of Data and GIS Sustainability are shown below.

Governance



Data and Databases



Procedures, Workflow, and Integration



GIS Software



IT Infrastructure



Training, Education, and Knowledge Transfer



Departmental Needs Summary

The following County departments, divisions, and external agencies were interviewed to identify opportunities where GIS could help fulfill their business needs:

- Administration
- Agriculture Commissioner
- Assessor
- Auditor, Treasurer, Tax Collector
- Child Support Services

- Health and Social Services
- Information Services
- Office of Emergency Services
- Planning and Building Services
- Public Works
- Sheriff's Office

- ◆ Clerk
- ◆ Community Social Services
- ◆ Environmental Health
- ◆ University of California Cooperative Extension

Departments with the greatest needs overall are Administration, Agricultural Commissioner's Office, Planning and Building Services, and Public Works. Key needs are summarized in the table below. Please see the Needs Assessment Report for a complete list of Department Needs.

Phase II: Conceptual Alternative Systems Design

Lassen County's geospatial needs, priorities, and constraints were evaluated and addressed with the Conceptual System Design. This scalable design features recommendations based on the business needs and objectives identified during the Needs Assessment phase. The report includes GIS Vision, Goals, and Objectives.

Proposed GIS Vision

The vision for Lassen County GIS is to implement and manage an industry-standard, enterprise, scalable, sustainable, and innovative Geographic Information System (GIS) solution that promotes effective and innovative use of geospatial technology and location intelligence to improve the efficiency of County operations.

Phase III: Strategic Implementation Plan

The results of the previous two phases are summarized in the table below that outlines the key findings, recommendations, and benefits.

Key Findings	Recommendations	Benefits
Governance		
- There have been several efforts to start a GIS program in the past, but they have not resulted in wide-spread use throughout the County. - GIS administration lies in the Planning and Building Services (PBS) Department, which is a barrier to the organization-wide reach of GIS technology. - GIS work is mainly spent responding to requests to make maps rather than developing applications to empower staff.	- Formalize the GIS Governance Model. - Add a GIS Technician under the GIS Coordinator. - Shift the GIS responsibilities to the IS Department. - Add a GIS Analyst under the GIS Coordinator. - Establish a GIS Steering Committee of department managers. - Improve coordinated Enterprise GIS Management. - Develop GIS Policies and Mandates. - Consider a GIS Technical Committee as GIS use expands. - Hold GIS User Group meetings and events.	- Improve Cross-Departmental Operations - Improve Efficiency - Increase Productivity - Streamline Business Operations - Improve Communication, Coordination, and Collaboration
Data and Databases		
- GIS underutilization within the County and silos of data and databases. - Parcel, zoning, and general plan layers are inaccurate and out-of-date. Work has	Conduct a Digital Data Assessment of all GIS Data layers.	- Improve Data Accuracy - Modernize Spatial Thinking - Make Better Quality and More Effective Decisions



Key Findings	Recommendations	Benefits
begun to update these layers but will be an extensive effort. ◆ The PBS Department wants to improve the GIS Zoning layer to a point where it can be approved as the official County Zoning map. ◆ Each department interviewed identified several GIS data needs, such as: ◆ Demographics ◆ Election Districts ◆ Environmental Data ◆ Health and Social Services Layers ◆ Locally-flown Aerial Photography ◆ Updated Address Points ◆ Updated Street Centerlines ◆ Utility Layers	◆ Geo-enable data for display in GIS as identified in the Needs Assessment. ◆ Create or update departmental GIS layers as identified in the Needs Assessment. ◆ Create Street Centerlines layer. ◆ Acquire or access updated Aerial Photography. ◆ Maintain the Parcel and Zoning Layers ◆ Hold GIS User Group meetings and events.	◆ Respond More Quickly to Citizen Requests ◆ Present Data and Information in New and Effective Ways ◆ Prioritize Environmental Stewardship ◆ Maintain, Monitor, and Model Organizational Assets ◆ Provide Data to Regulators, Developers, and Other Parties ◆ Improve Access to Government Information
Procedures, Workflow, and Integration		
◆ Departments have limited access to the Assessor information and parcel maps. The full ParcelQuest web site is available only to Assessor and PBS. ◆ Assessor's Office ◆ Parcel Mapping Workflow/Business Process Analysis ◆ Integrate MegaByte with GIS - Link parcels to property tax documents	◆ Prioritize and integrate GIS with business systems as identified in the Needs Assessment. ◆ Document GIS Standard Operating Procedures (SOPs) and other workflows identified in the Needs Assessment.	◆ Make Better Quality and More Effective Decisions ◆ Effectively Manage Assets and Resources ◆ Save Time ◆ Present Data and Information in New and Effective Ways ◆ Improve Information Processing ◆ Improve Access to Government Information



Key Findings	Recommendations	Benefits
◆ PBS Department ◆ SmartGov integration – linking parcels to permits via APN ◆ Eagle Web integration – linking parcels to recorded deeds, legal parcel status, and zoning ordinances ◆ Agricultural Commissioner's Office ◆ Integration with CalAgPermits to visualize permits. ◆ Integration with CalPEATS to visualize inspection locations. ◆ Integration with CalTrap to visualize trapping locations. ◆ Enable field staff to collect/verify data with ArcGIS Field Maps.		
GIS Software		
◆ Most departments require GIS Software solutions, such as: ◆ ArcGIS Hub – Open data portal to easily share data internally and with public ◆ Dashboards – Visualize and summarize complex data ◆ Field Maps – Enable field staff to collect/verify data, conduct	◆ Switch Esri Licensing to the Small Government Enterprise Agreement (SGEA). ◆ Deploy ArcGIS Enterprise. ◆ Deploy ArcGIS Hub.	◆ Inform and Educate Stakeholders ◆ Provide Data to Regulators, Developers, and Other Parties ◆ Present Data and Information in New and Effective Ways ◆ Promote Open and Transparent Government ◆ Improve Access to Government Information ◆ Improve Efficiency



Key Findings	Recommendations	Benefits
- condition assessments and inspections - Internal and Public Web Applications – View parcels, zoning, and ancillary layers in one application - Story Maps – public engagement, promote County services - County is using local government industry standard Esri GIS software ecosystem of solutions; however, GIS licensing model is limited, and version most users have installed is outdated		- Make Better Quality and More Effective Decisions - Improve Communication, Coordination, and Collaboration - Respond More Quickly to Citizen Requests - Identify, Analyze, Predict, and Quantify Impacts to the Community
IT Infrastructure		
- IT infrastructure limiting GIS expansion. - The optimal SQL database version needs to be determined and installed for an Enterprise geodatabase.	- Develop a Strategic Technology Plan and IT Disaster Recovery and Emergency Response Plan including GIS. - Develop a GIS Architectural Design diagram. - Develop a GIS Mobile Action Plan. - Develop a Data Storage Strategy. - Develop IT Change Control Policies and Procedures.	- Effectively Manage Assets and Resources - Improve Efficiency - Save Time



Key Findings	Recommendations	Benefits
GIS Training, Education, and Knowledge Transfer - Only a few staff are experienced in using GIS software, mostly ParcelQuest and Google Maps/Earth. - Not all staff know how documents, data, maps, and systems can work together for their job. - The lack of a user group and other educational methods leads to an underuse of data and software. - Lack of GIS staff succession planning creates risk due to staff turnover.	- Develop a formal, multi-tiered GIS Training Plan, including Mobile GIS training. - Schedule departmental-specific GIS training, especially for new staff members. - Conduct Mobile GIS Training. - Attend instructor-led training classes from Esri or another vendor.	- Improve Communication, Coordination, and Collaboration - Improve Efficiency - Increase Productivity - Modernize Spatial Thinking - Boost Capacity Building within the organization

GIS Strategic Implementation Plan

This GIS Strategic Implementation Plan compiles the information developed during the Needs Assessment and provides a recommended strategy moving forward for Lassen County's GIS Program. The Phased Implementation Plan includes a detailed summary and a matrix of priority actions of the tasks recommended for the County with schedule timelines and cost estimates.

It is essential to understand that this implementation plan encapsulates ALL GIS recommendations for the County; however, it is not an all-or-nothing implementation. Suggested priorities for these tasks are in the budget table below. The County may proceed with the tasks outlined below or adjust the schedule based on priority and a realistic timeframe and budget. The County should review and revise the priorities as necessary to determine what can be accomplished within its resources and budget.

All cost estimates in the table below assume that the work is to be done by a GIS consultant and reflect estimates of the labor cost for completing each task. These estimates are based on the typical level of effort for each task and GTG's current understanding of the required scopes. Actual costs should be determined from a requirement-gathering process to determine a detailed scope of work for each task. Note that the costs do not include Esri software maintenance fees or new position salaries.

GIS Strategic Implementation Plan Summary

Broad priority categories have been assigned to each task to help the County distinguish higher priority items that should be accomplished during each phase, as budget and time allow. It is recommended that all priority categories are implemented within a phase rather than focusing on one or two categories across all phases. The four categories are defined as:

CATEGORY	DESCRIPTION
FOUNDATIONAL	High-priority objectives required to support GIS objectives.
CRITICAL	Mission-critical items that multiple departments need to improve operations or sustain the GIS program.
IMPORTANT	Important items that may benefit processes and procedures.
SUPPORTIVE	Tasks that serve to support the enterprise-wide GIS effort.

Summary Budget by Phase and Priority

Phase One		Total Cost: \$155,500				
Priority Grade	GIS Governance	Data and Databases	Procedures, Workflow, and Integration	GIS Software	IT Infrastructure	GIS Training, Education and Knowledge Transfer
FOUNDATIONAL	\$2,500	\$45,000	\$10,000	\$0	\$0	\$1,000
CRITICAL	\$0	\$50,000	\$0	\$44,500	\$0	\$0
IMPORTANT	\$0	\$2,500	\$0	\$0	\$0	\$0
SUPPORTIVE	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$2,500	\$97,500	\$10,000	\$44,500	\$0	\$1,000

Phase Two		Total Cost: \$193,000				
Priority Grade	GIS Governance	Data and Databases	Procedures, Workflow, and Integration	GIS Software	IT Infrastructure	GIS Training, Education and Knowledge Transfer
FOUNDATIONAL	\$2,500	\$35,000	\$40,000	\$0	\$0	\$2,500
CRITICAL	\$0	\$50,000	\$0	\$48,000	\$0	\$0
IMPORTANT	\$0	\$5,000	\$0	\$0	\$0	\$0
SUPPORTIVE	\$0	\$0	\$0	\$0	\$10,000	\$0
Total	\$2,500	\$90,000	\$40,000	\$48,000	\$10,000	\$2,500

Phase Three		Total Cost: \$159,500				
Priority Grade	GIS Governance	Data and Databases	Procedures, Workflow, and Integration	GIS Software	IT Infrastructure	GIS Training, Education and Knowledge Transfer
FOUNDATIONAL	\$0	\$15,000	\$30,000	\$15,000	\$0	\$2,500
CRITICAL	\$0	\$25,000	\$0	\$66,000	\$0	\$0
IMPORTANT	\$0	\$2,500	\$0	\$0	\$0	\$0
SUPPORTIVE	\$0	\$3,500	\$0	\$0	\$0	\$0
Total	\$0	\$46,000	\$30,000	\$81,000	\$0	\$2,500

Phase Four		Total Cost: \$138,500				
Priority Grade	GIS Governance	Data and Databases	Procedures, Workflow, and Integration	GIS Software	IT Infrastructure	GIS Training, Education and Knowledge Transfer
FOUNDATIONAL	\$0	\$20,000	\$15,000	\$15,000	\$0	\$2,500
CRITICAL	\$0	\$15,000	\$0	\$66,000	\$0	\$0
IMPORTANT	\$0	\$0	\$0	\$0	\$5,000	\$0
SUPPORTIVE	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$35,000	\$15,000	\$81,000	\$5,000	\$2,500

Phase Five		Total Cost: \$83,500				
Priority Grade	GIS Governance	Data and Databases	Procedures, Workflow, and Integration	GIS Software	IT Infrastructure	GIS Training, Education and Knowledge Transfer
FOUNDATIONAL	\$0	\$10,000	\$10,000	\$0	\$0	\$2,500
CRITICAL	\$0	\$10,000	\$0	\$46,000	\$0	\$0
IMPORTANT	\$0	\$0	\$0	\$0	\$5,000	\$0
SUPPORTIVE	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$20,000	\$10,000	\$46,000	\$5,000	\$2,500

(See the Strategic Implementation Plan Section of the GIS Strategic Plan for a complete list of cost estimates by task.)