Land Management System Implementation Plan

For

Pennington County and the City of Rapid City, South Dakota

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GeoAnalytics™

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A. Overview

The City of Rapid City and Pennington County have embarked on a study to examine current practices related to the development of property. This effort has resulted in the design of a framework for the selection and implementation of a land management system (LMS) to serve all aspects of the City and County's land development process.

The Situation Assessment defined the *"as is"* of the land development process at the City and County. It outlined current organizational structure, business practices and the technology, data and applications currently in place that the organizations utilize throughout the development process. The conceptual system design presented a model of the system that captures how the land development process *"should be"* and how an application will be utilized to implement this process. It included a discussion of data and application integration, organizational change as well as the scope and expectations of the system to be procured.

This document presents an implementation plan for the selection and deployment of a land management system. The implementation plan builds upon the Conceptual Design by defining the *"when"*, *"where"*, and *"how"* aspects of the system as well as making recommendations as to *"who"* and *"how much"*.

B. LMS Goals and Objectives

As stated in early documents, the City and the County have two primary goals for implementation of a LMS. They are:

- *Implement Enterprise LMS Software.* This goal involves the implementation of enterprise LMS software so that all pertinent City and County staff can effectively and efficiently forecast, log, track and retrieve specific and summary data on development activities.

- *Develop One Stop Shopping for Land Development at the City and County.* This customer service focused goal seeks to implement LMS software as a first step toward overall one-stop shopping at the City and County.

Objectives related to the two goals stated above have also been identified. They are:

- *Improve Customer Service.* This objective is seeks, in part, to provide customers a web application so that they can both submit and query City and County land management information.

- *Improve Staff Communication.* This objective seeks to provide staff the ability to easily and readily access current and historic data about properties, projects, permits, inspections, complaints or business licenses.

- *Enhanced Productivity.* This objective will be accomplished by standardizing business activities and workflow for all phases of the development process.

C. Recommended LMS Implementation Tasks

The following is a list of proposed tasks to lead to implementation. The cost figures represent best estimates. Actual costs may be lower or higher. In addition, no specific costs were identified for work completed in-house by staff. Costs for consultants have been identified for those activities that will likely require outside assistance.

1. Establish an LMS Task Force

a. Description

A multi-departmental committee should be formed to; a) guide the selection, design and implementation of the software, and b) become trained in its maintenance. It is anticipated that this committee will be made up of approximately 7 people comprised of both management, clerical and field staff. The selected vendor should provide sufficient staff to manage the project. Limited City staff resources require the vendor to play an active role in installing, customizing and implementing the software. Once deployed, the LMS would be maintained predominantly by the LMS administrators located in Planning, Building Inspections and Engineering. The following diagram defines the roles.

Figure 1: LMS Task Force
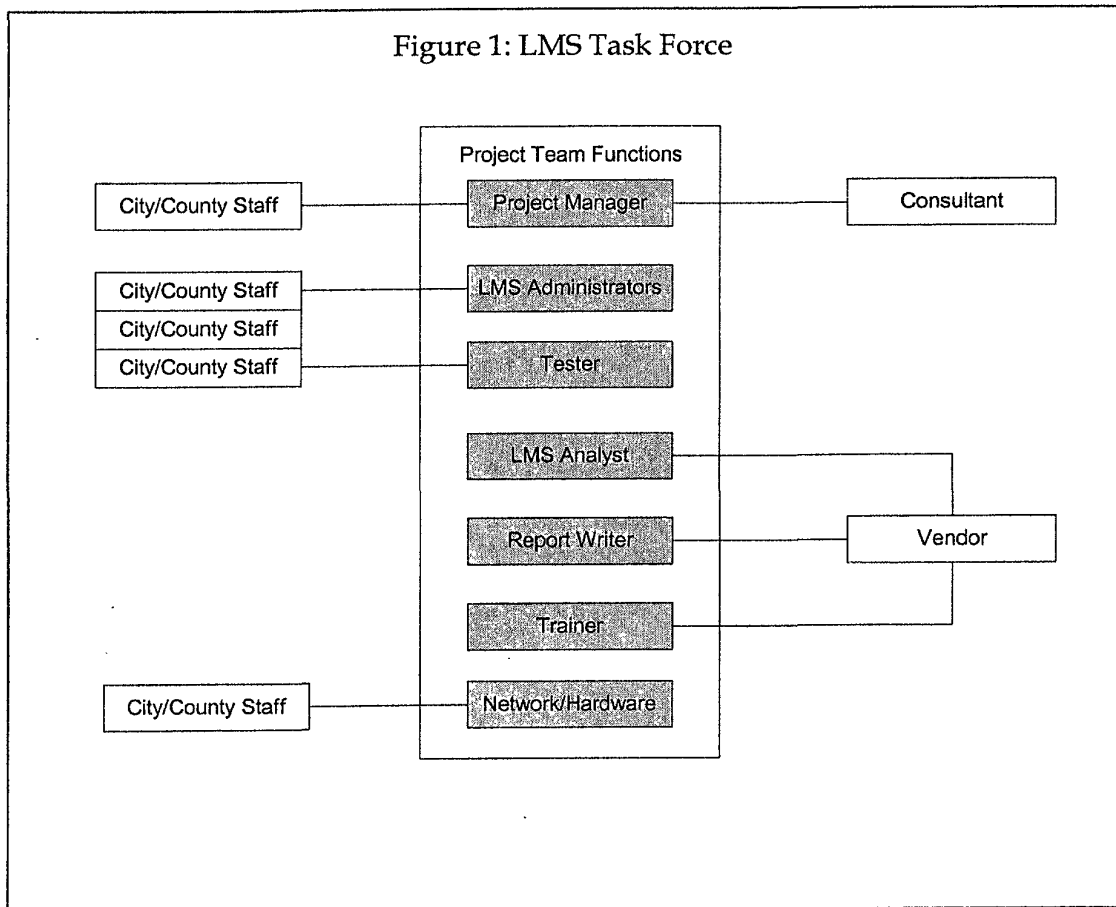
b. Timeline

The task force should be created as soon as possible and exist throughout the selection and implementation process.

c. Estimated Cost

Activity	Cost
• Staff time	None
• City Council and County Board Approval	None
TOTAL	**None**

2. Complete Business Process Design

a. Description

The City and County have an interest in performing business process design. However, significant redesign will be hampered by the need to implement the system as soon as possible. Because of this, it is anticipated that very little redesign will be completed as part of the LMS implementation. However, to expedite implementation of the project and to reduce some of the service costs, the City and County should begin to diagram business processes behind the planning, permitting and code enforcement processes. This process typically requires staff input to ensure that the appropriate steps are being captured. Note, final revisions may need to occur in conjunction with the chosen software's capabilities.

Important components of business process design are to define all fee methods, messaging, and other functionality that must occur as a component of any given step in a process and to standardize process steps between permits so that implementation of web-based services is more straightforward and to.

b. Timeline

This task will be done by staff, is not hindered by other priorities and is vital to the smooth implementation of LMS software so it should therefore begin immediately. Approximately 1 month is required to diagram all planning, permitting and code enforcement processes.

c. Estimated Cost

Activity	Cost
• Staff time	None
• Visio 2000 Standard Edition (for diagram production)	$200
TOTAL	**$200**

3. Implement an Enterprise Database Design

a. Description

The City and the County both perceive a need to maintain centralized access and, potentially, management of property-based data. There are a number of cross-cutting business functions driving this need. The need extends beyond LMS to functions such as GIS, engineering, etc. To do this, however, requires a database design that supports user and application requirements from all of the City and County departments; that is, an enterprise database design. The form of this design exercise would take at least three steps. The first is the development of an enterprise data model, i.e., data content and descriptions for the specific data that would be part of the enterprise database. Second, a physical table design would be developed and refined. The third dimension would be the development of procedures and protocols by which the data content would be populated, maintained, and updated. In addition to the above, staff indicated a desire to phase out the HP3000 over time and replace it with a Windows 2000 server.

b. Timeline

Implementation of an enterprise database design requires effort from both the City and County. The design and implementation of the database may impact the timeline for implementation of the LMS. It is anticipated that the design would take approximately 3 months.

c. Estimated Cost

Activity	Cost
• Consultant facilitation/design	$20,000
• Robust Windows 2000 Server	$15,000
• Commercial RDBMS (Windows	$15,000
TOTAL	$50,000

4. Select and Purchase LMS Software

a. Description

The City and County are interested in a client server software implementation with future possibilities for web-enabled services. Based on these needs, there are a variety of LMS vendors on the market. Section D outlines a group of vendors that most appropriately fit the needs described. The City and County also have a defined list of software requirements. The software purchase price is based on 37 concurrent licenses as defined in the Conceptual System Design document.

b. Timeline

The timing for LMS software selection and procurement is predicated on the completion of the enterprise database design. During the software selection process, vendors should be provided with requirements about running off of a centralized database. Implementation of the software should not occur until a prototype of the enterprise design is in place. Specific cost information

from each of the proposed vendors is not available; therefore the following are good faith estimates that should accommodate the higher end of possible software costs.

c. Estimated Cost

Activity	Cost
• LMS software review	None
• Interviews and demonstrations	None
• LMS software purchase	$90,000 - $150,000
TOTAL	$120,000

Yearly LMS software maintenance (estimated at 19%) would run from $14,000 - $24,000

5. Implement LMS Software

a. Description

There are different approaches to implementing LMS software. Approaches vary predominantly by the level of involvement the vendor plays in business process design, data conversion, system customization and report creation. Business process design and data conversion issues are included as separate sections in this plan. Based on staff availability, GeoAnalytics recommends that the selected vendor play an active role in the implementation. This does not preclude, however, City and County staff being involved in the project.

Part of the implementation process will entail conversion of legacy LMS data such as planning projects, permits and inspections. Tracking of complaints and business licenses will begin fresh without any legacy data in the LMS. The legacy LMS data should be housed in the LMS database. Data sets to be converted are listed below.

Table 1: Legacy LMS Data to be Converted

Historic and Current Data Sets	Number of Features
• Planning projects	500
• Permits	7500
• Inspections	25,000

b. Timeline

GeoAnalytics recommends that the LMS be implemented in the following order:

LMS Software Functionality	Time Frame
• Property control (running the LMS off of the enterprise database design)	8 weeks
• Legacy LMS data conversion	4 weeks
• Planning/plan review and Accounts	12 weeks

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Receivable
- Permits and inspections   8 weeks
- Code enforcement   8 weeks
- Business licenses   8 weeks

Some of these steps may run concurrently and accordingly the overall timeline will be less than the sum of these steps.

c. Estimated Cost

There is considerable variation in implementation approaches and specific cost information from each of the proposed vendors is not available; therefore the following are good faith estimates that should accommodate the higher end of possible implementation costs.

Activity	Cost
• Implementation Services	$125,000 - $200,000
• Legacy LMS Data Conversion	$7,500
TOTAL	$200,000

6. Implement Internet-based LMS Capabilities

a. Description

The City and County want to implement a variety of Internet-based LMS capabilities including the ability to submit over-the-counter permits and complaints, check the status of pending applications and view GIS-based parcel data. The City has been experimenting with ESRI's ArcIMS software to support the third objective mentioned above. A modified ArcIMS template application can provide basic viewing access to spatial data.

b. Timeline

There are differing opinions as to when web-related LMS services should be implemented, however, they must be put into place after the LMS is functional. Implementation will take approximately 8 weeks.

c. Estimated Cost

Activity	Cost
• Additional software	$15,000
• On-line submittals	$15,000
• On-line status checking	$10,000
• Modified ArcIMS template application	$15,000
TOTAL	$55,000

Some of the vendors listed in section D provide Internet-based services rather than standalone products that could be run by the City and County. In those cases, upfront costs would most likely be less but transactional fees over time would need to be factored in.

7. Implement Document Imaging and Link to LMS

a. Description

The ability to link documents, digital images, sound files and other multimedia documents to LMS activities is standard in many LMS packages and can be implemented without a full-fledged document imaging system in place. However, this capability would require at a minimum the ability to digitize the data to be linked.

b. Timeline

Implementation of these capabilities could be done as part of the standard implementation. However, based on staff availability and the desire to get a basic system up and running initially, it is suggested that it wait until the system is fully operational. Implementation of these capabilities will take approximately 8 weeks.

c. Estimated Cost

Activity	Cost
• Scanner (medium-scale format)	$5,000
• Additions to LMS software setup	$10,000
TOTAL	$15,000

8. Implement Field Computing with the LMS

a. Description

A long term goal for the City and County is to provide field workers the ability to access the LMS and its data while in the field. This would provide users the ability to dynamically determine if permits are pending on properties, log inspection results immediately and generally have appropriate information at their fingertips. In this plan, a car mounted, rugged tablet PC is used for costing purposes.

b. Timeline

Implementation of these capabilities could be done as part of the standard implementation. However, based on staff availability and the desire to get a basic system up and running initially, it is suggested that it wait until the system is fully operational. Implementation of these capabilities will take approximately 12 weeks.

c. Estimated Cost

Activity	Cost
• 5 field units	$30,000
• Additional hardware	$25,000
TOTAL	$55,000

Yearly telecommunication service costs would run approximately $4000/year.

Total Cost Estimates

Implementation Task	Approximate Costs
1. Establish an LMS Task Force	None
2. Complete Business Process Design	$200
3. Implement an Enterprise Database Design	$50,000
4. Select and Purchase LMS Software	$120,000
5. Implement LMS Software	$200,000
6. Implement Internet-based LMS Capabilities	$55,000
7. Implement Document Imaging and Link to LMS	$15,000
8. Implement Field Computing with the LMS	$55,000
Total	$495,200

D. Suggested LMS vendors

There are numerous software vendors that provide solutions for permit tracking, inspections, and other LMS activities. Far fewer offer an enterprise solution that is customizable and able to run off of an organization's existing enterprise database. The following is a partial listing of the leading firms and products in this industry listed in alphabetical order.

1. Accela

Accela, formerly Sierra Systems, has approximately 20 years of experience implementing permitting systems. Accela.com offers client server applications with their *Permits Plus®* and *Accela Enterpise ™* as well as Internet services via *Accela Automation ™* and *VelocityHall ™*. They have an international install base.

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Accela
701 Gateway Blvd., Ste. 151
South San Francisco, CA 94080
Telephone: (650) 635-0218
Fax: (650) 695-1489
http://www.accela.com/index.htm

2. Govern Software

Govern software has approximately 20 years of experience implementing land management systems in local government. Their client server *Property Control, Permits & Inspections & Licensing* as well as the *Accounts Receivable and Cash Collection* modules offer the land management capabilities outlined by the project. Clients are currently *Govern.Net* or custom applications for Internet services. Field-based computing projects are currently underway. They have an international install base.

Contact Information
Govern Software, Inc.
281 St.Paul St. East, Suite 200
Montreal, Quebec
H2Y 1H1
Telephone: 800-561-8168 or (514) 876-1199
Fax: (514) 876-4569
http://www.governsoftware.com/

3. Hansen Information Technologies

Hansen's version 7.5 has a variety of solutions relevant to the City and County's needs. Their client server *Land Management System* includes land, parcel, plan review, permit application processing, building inspections, permit issuance, conditions of approval, business and contractor licensing, planning and code enforcement capabilities. Hansen also has a *FieldWORKS* module for mobile computing and asset management. They have an international install base.

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Hansen Information Technologies
1745 Markston Road
Sacramento, CA 95825-4026
Telephone: 800-821-9316 or (916) 921-0883
Fax: (916) 921-6620
http://www.hansen.com/

4. Tidemark Solutions

Tidemark Solutions was founded in 1984. Their *Tidemark Advantage* product offers the land management capabilities outlined by the project. *Tidemark Click*, *Tidemark eConnect* and *Tidemark Wireless* are additional modules that would support web-based services for permitting and mobile computing.

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http://www.tidemark.com/ts_home.asp