



INFORMATION TECHNOLOGY STRATEGIC PLAN

SUMMER 2006

CITY OF ROSEBURG

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Roseburg, OR 97470



INFORMATION TECHNOLOGY STRATEGIC PLAN

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DEVELOPED BY
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Section 1

EXECUTIVE SUMMARY

The City of Roseburg 2006 Information Technology Strategic Planning process both assessed current resources and examined needs and priorities for the use and support of IT in support of the mission of the City.

The City of Roseburg is dedicated to the well being of all citizens and the livability of our community.

The City developed the 2006 Strategic Plan for several reasons:

- To establish plans and priorities for the use of Information Technology to better serve citizens of the City of Roseburg.
- To create greater cross-department understanding of and involvement in IT issues.
- To determine funding needed to move the City into the capabilities now available through Information Technology.

Outcomes of the 2006 IT Strategic Plan

Assessment of current resources:

A complete inventory and assessment of current Information Technology resources was gathered and is documented in the plan.

Goals:

The Strategic Planning process information gathered from many meetings with City staff. As a result the following goals were developed:

1. Provide citizens, the business community and City staff with convenient access to appropriate information and services through technology.
2. Share applications and data cross departments and cross agencies.
3. Provide reliable communication and computer infrastructure for both staff and public where appropriate.
4. Develop written plans, documentation and policies. Update regularly (not less than twice a year). Share IT plans with City management team at regularly scheduled meetings.
5. Provide adequate technology related training opportunities for City staff.

Strengths and Needs:

Each department provided input on IT related strengths and needs resulting in the following commonly held views:

Strengths:

- Workstations provide an adequate computing platform for end users, for the most part.
- Wireless access is seen as a strength of the City network.
- Central server location provides a big improvement over the past.
- IT staff is knowledgeable and motivated to provide good customer service.
- City Manager is placing more emphasis on IT, which will result in improvements.

Needs:

- Need for shared calendars and e-mail address books.
- Shortage of IT staff – need to wait too long to get some problems solved.
- Need to share applications and integrate systems to eliminate duplicate data entry.
- Users report a need for more computer-related training.
- The City should increase the ability to accept payments from the public both online and in person using debit or credit cards.
- GIS needs emphasis and enhancements.
- Phone system could use better integration.

Special Sections:

Because of the need for emphasis and special skills in evaluating and recommending GIS and Telephone related infrastructure, individual sections were created for those elements of the plan.

Project List & Costs:

A list of twenty suggested projects and related costs are included. Projects range in size and cost. Each will need a project plan and additional work to evolve from the strategic planning level to a tactical plan that can be implemented.

Timeline:

A suggested timeline has been outlined, however changes may be needed based on funding and department priorities. Some projects have technical reasons for being completed first and are indicated as such in the timeline.

Next Steps:

The City of Roseburg Management team meets and reviews the IT Strategic Plan and discusses department priorities and funding in more detail. A tactical working IT plan should be created as a result of this meeting. Then, as each project begins, a detailed complete project plan is developed.

LCOG staff greatly enjoyed working with the City of Roseburg and hopes to continue to have opportunities for effective working relationships.

Section 2

INTRODUCTION

In the spring of 2006, Eric Swanson, City Manager of Roseburg, along with the management team determined that the time was right to develop an Information Technology Strategic Plan. The goal of this process was to assess the City's technical resources and define a direction for future technology related projects and spending. The plan was developed working with all department heads as stakeholders to provide an analysis of the current systems and applications and develop suggestions for the future and prioritization of projects. The plan is a five year "roadmap" identifying goals and objectives and setting the future technologic direction for the City with two years of more tactical suggestions. As the assumptions, economy, technology and other factors on which this plan is based continue to change it is necessary that the plan be reviewed at least annually and adjusted for current conditions.

Specific areas of interest to the City included:

- Use of the Internet
- Hardware and Software Analysis
- Geographic Information Systems
- Regionalization
- Staff Structure
- Telephone Services
- Municipal and Public Networking

Scope of the plan:

1. The plan provides a five-year strategic technology plan addressing the areas listed above and others identified during the process of stakeholder discussions.
2. Recommendations for the first two years of action / spending.
3. An infrastructure design and a detailed migration plan. This plan addresses creating a more flexible and cost-effective infrastructure.
4. As GIS was a particular area of focus and value to both the internal City staff and the citizens of Roseburg, a separate GIS plan is included as a subset of the IT Strategic Plan.

Section 3

PROCESS

The City requested that proposals be submitted to create the plan as described in the Introduction of this document. Lane Council of Governments (LCOG) responded to the request and was awarded the contract.

Pete Felten, City of Roseburg IT Manager was named as point person to represent Roseburg.

The following City of Roseburg staff members were stakeholders in the development of the plan:

Name	Title
Eric Swanson	City Manager
Fred Alley	Community Development Director
Cheryl Guyett	Finance Director
Jack Cooley	Fire Chief
Barbara Gershon	HR Director
Mark Nickel	Police Chief
Sheila Cox	City Recorder
Clay Baumgartner	Public Works Director
Pete Felten	IT Manager

Many other City of Roseburg staff provided valuable input to plan development.

The following staff members were assigned from LCOG:

Name	LCOG Title	Strategic Plan Role
Jody Cline	IT Manager	Coordinate and write plan, main contact for overall plan development
Byron Vanderpool	Technology Services Director	Provide Director level oversight and input on public safety aspects of the plan
Eric Brandt	GIS Manager	GIS plan author
Dan Mulholland	Telecommunication Manager	Telephone plan author

The following process was followed in developing the plan:

Inventory and Document Current Technology Infrastructure:

- Review existing computer systems configuration and documentation with IT Manager.
- Review network and how technology platforms are integrated.
- Review technology related to GIS.
- Review telephone system.

Develop stakeholder meeting content:

- Develop specific questions to ask stakeholders.
- Identify outcomes desired from stakeholder meetings.

Meet with primary internal stakeholders to identify technology needs and goals:

- Identify current data sources and key data requirements.
- Review organizational framework and staff resources.
- Review strengths and weaknesses of the current systems.
- Document known software and hardware needs.
- Review current map and GIS related information data, processes and products.
- Review phone bills and phone network diagram.
- Review priorities with stakeholders.

Research Proposed Solutions and Develop Preliminary Recommendations:

- Identify opportunities and implementation strategies.
- Research implementations in similarly sized cities.
- Develop draft plan including templates for follow on work to be completed post plan.
- Provide recommendation concerning telephones:
 - Configuration of lines and services
 - Future of the Toshiba Systems
 - Potential capabilities in an upgraded or replaced system
 - Financial analysis of equipment and service alternatives
 - Use of City facilities to interconnect locations
 - Potential cooperation with Douglas County
- Develop GIS component of plan including:
 - GIS Activities and Applications
 - Conceptual GIS System Model
 - GIS Implementation Strategies

Develop Draft Plan and Submit to Stakeholders for Comments and Suggested Revisions:

- Stakeholders given opportunity to review draft plan components.
- Comments and suggested revisions submitted to LCOG.

Finalize plan deliverables:

- Create final documents and deliver both in both electronic and hard copy formats.
- Present to City Manager and stakeholders or other forum if desired.

Section 4

CURRENT ENVIRONMENT

Servers:

Currently there are nine Servers installed including servers for the following functions:

- Justware / Court
- File Servers
- Records-Mail / Police
- AS/400 Utilities / Finance
- Domain Controller and Backup Domain Controller

Network:

- Ethernet Network – most locations are connected to City Hall via fiber / implementing wireless point to point connections.
- Wireless access points – currently one at City Hall, Fire, two at Police Department, Security is WEP 128 bit encrypted.
- Douglas FastNet is the City's ISP. Also provides fiber transport (except for the connection from City Hall to Police Department which is City owned). The FastNet fiber is provided in trade for use of towers next to City water tanks.

Infrastructure:

- Symantec for Anti Virus. Laptops update directly from Symantec website and Desktops update from local server.
- Sonic Firewall Pro 4060 firewall. Content filtering inbound on firewall. No Java, Active X, porn, etc. Gateway antivirus and anti-spyware. Can make exceptions on filters, for example for detectives.

Workstations:

- Laptops with tri-mode wireless capability (802.11a,b,g).
- PCs – started with Dell (before that was HP) now moving to Gateway for better pricing and tech support.

Applications:

- City of Roseburg Police use laptops using wireless to access the County Tiburon system which was acquired by the County with Homeland Security Grant funding.
- E-mail – Outlook at desktop, but City does not have an Exchange Server. Use Modus mail system by Vircom. This e-mail is Pop3 and has limited web access.
- Microsoft Office is used for word processing and spreadsheet functions.
- Building permit and planning is based on a Microsoft Access 97 platform and was originally created by a building inspector. It has been sold to other cities. Recently hired a local Microsoft Access programmer to update. However, the database is the Microsoft Access Jet Engine and allows only 15 shares. It is not good at file locking and could lead to data corruption.

Printers:

- Printers – HP and Samsung. Printers are accessed by IP address.
- Three Imagistics (Oce' - formerly Pitney Bowes) network attached copiers
- Push scanning at Police Department to PDF.

GIS:

- See GIS plan for current GIS environment analysis.

Telephone:

- See Phone plan for current telephone environment analysis.

Security & Policy:

- Currently there is an IT User Group with staff assigned in each department with Admin access to local machines. This allows some problem solving to be done locally in the department.
- Most users are Power Users and do not have Administrator authority on their own PCs limiting exposure to virus and worm damage.
- No personal use of City computers is allowed as specified in City Policy 1.6-2.
- Employees are not allowed to download software nor make any changes to City computer setups without permission. Loading of personal software is not allowed. (Policy 1.6-3)
- Public Record Requests are addressed in Policy 1.6-4. All department heads and city councilors e-mail is forwarded and stored for retrieval later. Other electronic data are backed up but not stored permanently.
- Password policy is specified in Policy 1.6-5, however needs to be updated to reflect current practices.

Existing Potential Changes Under Consideration:

- Exchange server (in-house or outsourced)
- Microsoft Office upgrade
- Network platform to Active Directory
- More web based applications
 - Want to do water billing online
 - No Intranet yet
- Financial system going to web-based
- Courts – Justware Citrix – the vendor would host
- Citrix Winframe with “skinny” PCs (many users only use MS Office)
- Finish wireless network plan:
 - 32 total wireless access points – with coverage on each floor
 - Four on corners 801.11a
 - 802.11g in center back to DMZ zone on network for purposes of getting to Internet especially in conference rooms
- Possible Radius server for remote logon and user id administration
- VPN - Sonic Firewall Pro 4060 – has VPN capability but not using it yet:
 - Currently staff e-mails documents back and forth to work on

Section 5

INFORMATION TECHNOLOGY GOALS

After meeting with the City department heads and other City staff, the following five general information technology goals are suggested to reflect City of Roseburg top priorities which can be addressed through technology. GIS and Telephone goals are addressed in their separate sections of the plan.

GOAL 1 - Provide citizens, the business community and City staff with convenient access to appropriate information and services through technology:

- Provide ability for citizens to make payments for more City services online.
- Post more City informational data online for both public and staff access.

GOAL 2 - Share applications and data cross departments and cross agencies.

- Eliminate duplicate data entry where possible.
- Make more data available electronically.
- Share scheduling information and e-mail address information across City departments.
- Provide more internal information online for City staff rather than on paper.

GOAL 3 - Provide reliable communication and computer infrastructure for both staff and public where appropriate.

- Continue to develop a robust and flexible computing infrastructure for City staff.
- Ensure that computer platforms are standardized as much as feasible.
- Where appropriate, make computing services available to the public.

GOAL 4 - Develop written plans, documentation and policies. Update regularly (not less than twice a year). Share IT plans with City management team at regularly scheduled meetings:

- Develop written plans to better plan and organize technology acquisition, inventory, and tracking.
- Update policies to address current computing environment.
- Increase communication of needs from department heads to IT Manager.

GOAL 5 - Provide adequate technology related training opportunities for City staff.

- Departments indicate need for more training opportunities to increase productivity when using computer systems.
- Assess base knowledge level and areas of interest in order to provide most appropriate training.
- Provide adequate training opportunities and funding for IT staff.

Section 6

INFORMATION TECHNOLOGY STRENGTHS AND NEEDS

General IT Strengths and Needs

The following general IT strengths and needs were assessed from information gathered in meetings with City of Roseburg department heads and other City staff and from observations made by LCOG during the course of the assessment process.

These strengths and needs were those commonly mentioned across departments.

Strengths:

- Workstations provide adequate computing platform for end users, for the most part.
- Wireless access is seen as a strength of the City network.
- Central server location provides a big improvement over the past.
- IT staff is knowledgeable and motivated to provide good customer service.
- City Manager is placing more emphasis on IT which will result in improvements.

Needs:

- Need for shared calendars and e-mail address books.
- Shortage of IT staff – need to wait too long to get some problems solved.
- Need to share applications and integrate systems to eliminate duplicate data entry.
- Users report a need for more computer-related training.
- The City should increase the ability to accept payments from the public both online and in person using debit or credit cards.
- GIS needs emphasis and enhancements.
- Phone system could use better integration.

The following input was provided by each department:

COMMUNITY DEVELOPMENT DEPARTMENT

GIS important to department.

Close working relationship with Public Works.

TV outreach is successful.

Transitioning building inspection process to County.

- **Needs:**

- Shared calendar.
- IT staff limited.
- Customer service a high priority. Better service with internet.
- Improved electronic facilities to deliver presentations to the City Council and various Commissions including the Planning Commission, Economic development commission, and the Historic Resources Review Commission.
- Need funding to get permits system on-line.
- Would like planners to have computers in their cars in the future.

FINANCE DEPARTMENT

Current system is HTE and is AS/400 DOS based. Would like it to be more user-friendly. Transitioning to a vendor hosted web-based system via a 3-year contract. Don't want to lose history. Utility Billing still on AS/400 platform – consultant package is expensive, may keep AS/400 without service. Currently using Peachtree for inventory tracking. Use Excel for GASB34 requirements. Using Justware for Muni Count.

Needs:

- Document imaging for records retention.
- Would like new inventory tracking system (considering Cartograph).
- Court, inventory, billing, etc. systems are not integrated with fiscal system.
- Consider using County's AS/400 to run Utility Billing so City AS/400 could be retired.
- Make payments to vendors electronically and maybe accept payments (very important to have a bank partner who understands it).
- Budget available on the web.

FIRE DEPARTMENT

Dispatch at County – on Tiburon – bought police version – no Fire EMS portion. Just bought Emergency Response (web based), easy for updates, etc. Not using extensively yet. Currently loading hydrant data. GIS is important to Fire, working to get maps and all layers.

Using PermitPak. MEDCOM provides transport for EMS. Care Facility runs 25% of volume, and City has relatively little say over dispatch. Opticom data available have just bought software to read run data.

Needs:

- Complete implementation of Emergency Response (web-based).
- Want to use CAMEO to interface with HazMat.
- Would like handheld computers with infrared transmission to ambulance crew and also to do handheld fire inspections.
- Considering using Emergency Response off Internet, but cards are expensive (\$50 a month).
- Need to improve E-mail. Working on setting up email address for each person.
- Improve access to Finance system.
- Phone is under same system but phone not compatible with City Hall. Results in dropped calls.
- Training should be a huge component of the plan.
- Increase communications between Community Development , Public Works and Fire Department.
- Reduce calls by sending ambulance only to care center.

HUMAN RESOURCES

Currently HR has hardcopy of all files.

Payroll files are in the Finance Department and in the HTE computer.

Doing recruiting online. Applicants can print application, but not fill it in online.

Needs:

- Would like a file of all computer based recruiting options.
- Need training module for new employees which include the big picture of the City of Roseburg.
- Need electronic method of appraisal tracking.
- Need better monitoring of FMLA.
- Would like more reporting, for example, how many claims in a department for a given time period.

POLICE DEPARTMENT

Seen as being further ahead with technology than other departments in the City.

The department has a good rotation of hardware – 1-2 years in cars and 3 years in records. No problems with telephones – all have cell phones.

Needs:

- Wireless ticket writing.
- Would like to link EOC's together wirelessly.
- Need GIS mapping for activity.
- Need to be able to accept payments either electronically online or with debit / credit cards in person.
- Evidence tracking by hand – may explore Tiburon.
- Improve connection speed to Tiburon in the cars.
- Need technology plan for new public safety building.
- Would like to receive reminders on certifications that expire. Desire a way to put in computer then ship to Oregon Department of Public Safety Standards and Training.

CITY RECORDER

Most of what the City Recorder does currently is on paper. Uses microfilm for some records retention.

Needs

- Property management is not electronic. Need electronic project plans and specs.
- City property for sale, lease, etc. is not easily referenced by anyone.
- Need shared calendar in order to reserve the conference rooms city-wide for all staff.
- Would like digital imaging since microfilm is getting more difficult. But State archives office still looks at microfilm as only true permanent medium. Have a lot of 10 year retention that take up a large space.
- Would like to see paperless agenda and attachments as the City Council packet.
- Public Information Requests need to be on website.

PUBLIC WORKS

GIS important to Public Works. Reorganizing with building department functions going to County – contracting with county for inspections. However, City Public Works will be contact for construction permits. Former Parks Department combined with Public Works. Would like Public Works to have ability to do their own IT work in a crisis. Central control of water system (SCADA landline based).

Needs:

- Need way to coordinate with County for inspections.
- 1000 permits per year – currently manually done.
- Need system for Parks reservations and permitting.
- Would like to track work order requests – building maintenance.
- Also, would like to track and report on:
 - Work order requests from public – i.e. potholes, trees needing attention.
 - Airport – tenant leases and maintenance.
 - Fleet tracking and pooled vehicles.
 - Street lights.
 - Maintenance inventories. Water, buildings, schedules (cleaning / painting).
- Automate applications for water service. Storm drainage utility fee. All on paper. Billing done through finance.
- Would like the HVAC system at City Hall to be attached to network.
- Desire more automated water meter reading, perhaps wireless. Currently a handheld unit but manually. Retrofitting meters is expensive, so may replace on 10-year cycle.

INFORMATION TECHNOLOGY DEPARTMENT

The IT staff very recently went from one person to two. The file sharing arrangement (H: W: and S: drives) seems to be working.

Needs:

- Doing projects in-house will be more cost effective over time but will require more staff.
- As staff grows, IT should evolve to be stand alone department with IT Director.
- IT Manager should be included in management team activities.
- Currently backup to Network Attached Storage at Police Dept. Need to increase retention period as it is only seven days currently.
- Need for Intranet – don't have one in place.
- Connect to Imagistics on network (plan another for Finance).
- Need more training including budget training for IT Manager.

Section 7

HOW CAN THE CITY ADDRESS TECHNOLOGY GOALS?

GOAL 1 - Provide citizens, the business community and City staff with convenient access to appropriate information and services through technology:

Improve GIS (see GIS Plan).

- Increase electronic payment capabilities:
 - Permits
 - Licenses
 - Parking Tickets
 - Impounds
 - Fingerprinting
 - Fireworks, Vendor Fees, Burn Permits
- Provide building permit information online.
- Provide access to department work plans and City goals online.
- Post building codes and other City documents on website.
- Post paperless City Council agendas, attachments and minutes for use by public and staff.

GOAL 2 - Share applications and data cross departments and cross agencies.

Eliminate duplicate data entry where possible via integrated systems.

- Investigate getting electronic versions of building plans for Fire Department use.
- Create electronic forms to replace paper forms
 - Review all current City paper forms and post those for staff on Intranet and those for Public on Internet.
- Migrate to document imaging for records retention as State Archivist sets standards.
- Implement City-wide shared calendars and global address books.
- Create Intranet for City staff with following potential functions:
 - Electronic Pay Stubs
 - Contact Lists
 - Policies and Procedures
 - Electronic Forms (for download)
 - News Items, Classified Ads, Bulletin Boards
 - HR Information (Benefits)
 - Jobs
 - Training / Tech Tips

GOAL 3 - Provide reliable communication and computer infrastructure for both staff and public where appropriate.

Investigate providing Wi-Fi downtown

- Provide more wireless access for City staff where appropriate
- Implement Help Desk software and call statistics
- Develop and implement hardware and software standards.
- Use centralized data storage on common database server when possible.
- Review and consider upgrade of phone systems (see phone plan).

GOAL 4 - Develop written plans, documentation and policies. Update regularly (not less than twice a year). Share IT plans with City management team at regularly scheduled meetings:

IT Acquisition Plan

- Capital items
 - Cost
 - When planned
 - Quantity
 - Details
 - Funding Source
 - Comments
- Expense items – same as above
- **Server diagram**
 - Server name
 - Server purpose
 - RAM
 - Disk (Capacity and percent used)
 - Number of processors and speed
 - Number of physical drives and slots available for more
 - Maintenance - when it expires
 - Location
 - Connection to network
- **Network infrastructure**
 - Show all City locations and how networked.
- **Security Policies**
 - Evaluate need to comply with HIPAA and/or CJIS standards
 - Document security measures in place:
 - Anti-virus
 - Anti-spyware
 - Password - policy and how enforced
 - Physical security
 - Remote access
 - Wireless
- **Information Technology Workplan**
 - Major projects for the year
- **Help Desk Statistics**

Goal 5 - Provide adequate technology related training opportunities for City staff.

City Classes Onsite

- Brown Bag Sessions / Tech Tips / Intranet Training Section

Section 8

RECOMMENDED PROJECTS:

1. Exchange Server

- Shared Calendar
 - Rooms
 - Cars
 - Other resources
- Global Address List

2. Complete Printer and other peripheral analysis and create plan to address shortcomings

- Implement Print Server for better print driver control
- Network Imagistics digital copiers and begin scanning in Finance department

3. Continue with plan to eliminate AS/400

- Financial System to Web (vendor hosted)
- Utility Billing to run on County AS/400 temporarily
Consider HTE module or review other software vendors for options

4. Create Intranet site

- Install IIS Server
- Hire Webmaster
- Design Intranet site, develop and bring online

5. Continue Internet Improvement

- Work with software developer either in house (new hire) or external to add significantly to City Internet site.
 - Electronic Payments
 - Wide Variety of Information for Public & City Staff
- Choose standardized development tools, and specify that vendors use them
 - Consider SQL Server for centralized data storage

6. Automate HR

- Consider HTE module

7. Strengthen IT Department

- Determine optimal IT staffing level as projects are planned for implementation
- Include IT Manager in City Management Team meetings

Strengthen Policy - Update Policy Manual

- Create and document HW and SW Standards
- Develop and enforce stronger security policies
- Create IT Documentation
- Hold Semi-Annual "IT Committee" meetings

8. Training

- Survey staff for training needs related to computer technology
- Investigate training options and create training plan

9. Implement Automated Help Desk with Call Tracking

- Use Intranet IIS Server
- Use statistics to help determine when to hire additional IT staff.

10. Update Software Infrastructure

- Move from NT to Active Directory and Windows Server 2003 OS
- Continue with plan to standardize Microsoft Office version.

11. Buy or develop Building Permits online system.

- Investigate State of Oregon system.

12. Migrate the Municipal Court application to Justware Citrix version.

13. Research and consider implementing City Citrix server

- Citrix Winframe with “skinny” Pc’s.

14. Finish wireless network plan, but strengthen security.

- 32 wireless access points – every floor
 - 4 on corners 801.11a (since that technology has already been purchased).
 - 802.11g in center back to DMZ zone on network for purposes of getting to Internet especially in conference rooms.
 - Longer term look for other solutions as wireless technology continues to improve
- Trouble shoot the slow network connection for Tiburon and implement solution

15. Investigate possible Radius server for remote logon and user id administration.

16. Research handheld systems:

- Ticketing for Police
- Building Inspection for Fire
- Meter reading for Utility Billing

17. Create VPN project

- Sonic Firewall Pro 4060 – has VPN capability
- Also consider using Citrix server

18. Fire needs same capabilities as Police with regards to reports and dispatch information through Douglas County Dispatch. Fire also needs to be completely switched to City server.

19. Review and implement GIS recommendations

20. Review and implement Telephone recommendations

21. Review and revise Strategic Plan

Section 9

TWO YEAR PURCHASE RECOMMENDATIONS

	Project Name	Comments	Cost
1	Exchange Server (in-house)	Server / Software / and ¼ FTE staff to administer.	\$20,000 initial then \$10,000/ year
1	Exchange Server Outsource	\$10 per id per month	\$20,000/ year
2	Printer Plan		\$10,000
3	AS/400 Elimination	HTE contract in place Cost to run Utility at Douglas County Future Utility System HTE	In budget Get from Douglas County Get from HTE
4	Intranet Site Server / Software	Based on typical server with IIS	\$5,000
4	Intranet Webmaster	Based on IT Tech Salary in budget	\$45,000/ year
5	Internet Development	Many functions – currently working with a vendor on this. Consider hiring a developer on staff.	Start with \$50,000 project
6	Automate HR	Consider HTE Module	Get from HTE
7	Strengthen IT Department Include IT Manager in City Management Team Meetings Policy - Documentation Hold IT Committee Meetings	City Manager / IT Manager	IT Staff salaries tbd IT Manager time for policy strengthening and communication
8	Training Plan	Develop and implement	\$5,000 / year
9	Help Desk	Use Intranet IIS server	City owns software
10	Software Infrastructure	Active Directory/MS Office	In budget
11	Building Permits Online	Developer or Package	\$50,000 – estimate
12	Justware Citrix	Muni Court Web System	Get from Justware
13	Citrix Server	Thin Client	In Budget (via PC cost savings)
14	Wireless	Equipment has been purchased	None until replacement
15	Radius Server	Investigation only	None
16	Research Hand Held Solutions	Research only in first two years.	IT Manager / Department staff time.
17	VPN - either Sonic or Citrix	Consider 2 factor authentication with Tokens	Server/Security Tokens – cost to be determined
18	Fire needs records and dispatch through Douglas County. Complete the switch to City Server for police and fire		IT Manager / Fire / Police staff time
19	GIS	See Section 8	
20	Telephone	See Section 9	
21	Strategic Plan Revision	IT Manager	No additional cost

Section 10

SUGGESTED TIMELINE

Year 1:

- (10) Software Infrastructure – Active Directory is pre-requisite to other projects.
- (1) Exchange Server (recommend in house)
- (19) GIS Projects
- (2) Create printer plan to be implemented over time.
- (14) Wireless (complete rollout)
- (5) Internet (being done by vendor)
- (7) Strengthen IT Department, complete IT documentation and begin holding “IT Committee Meetings”
- (15) Radius Server (investigate)
- (18) Fire needs records and dispatch information from Douglas County and Fire and Police to be switched to City server completely

Year 2:

- (4) Intranet – consider Intranet / Internet webmaster in-house
- (20) Telephone projects
- (8) Create and implement training plan
- (9) Help Desk (Intranet is a pre-requisite)
- (17) Virtual Private Network for telecommuting / remote connection
- (11) Building permits online
- (19) GIS Projects

Year 3:

- (6) Automate HR
- (12) Justware Citrix
- (13) Citrix Server
- (16) Research hand held solutions
- (19) GIS projects
- (3) AS/400 elimination

Year 4:

- (21) Strategic Plan revision
- (19) GIS projects

Section 11

TELEPHONE PLAN

CURRENT SYSTEM REVIEW

The City uses a variety of Qwest services that connect to Toshiba phone systems and sets. The systems date to the mid 1990's. The system evolved over a period of time, with Qwest services added at specific sites to solve particular problems.

The systems differ from site to site; the phones may look similar, but operate differently. The systems should be very reliable. Programming the Toshiba systems requires specific training; most changes involve physical connections and are not typically performed by customers. There are private lines in place that provide some dial intercom capability between some of the locations. There is a voice mail system that serves City Hall, with some mail boxes for other sites; for the other sites the mailboxes cannot pick up the telephones directly and there are no message waiting lights. Transferring calls between sites or systems is not possible or unreliable. Some sites and phones can be dialed with 3 digits, others must be called with 7. A review of the City's telephone bill shows spending on a variety of lines, line types, and Qwest features. The City is paying Federal Excise Tax on most bills; the City is exempt from this tax (the tax is ending soon). The City makes few long distance calls, yet the cost could be reduced by about 50% through use of State of Oregon long distance contracts (or other alternatives).

CHARACTERISTICS OF NEW SYSTEMS

New systems, of course, do new things, so we have a reason to buy them! For the City:

1. A single system can serve multiple locations. This means that features are uniform throughout the system. For example, all phones can be directly dialed from another system telephone.
2. Digital lines for connections to the public phone network are supported. These reliable connections can be less costly than older analog connections.
3. The digital lines, along with display telephones, can provide name and number display for both internal and external calls.
4. System wide voice mail can be provided, with ability to answer calls and provide message waiting indication throughout. For more money, voice mail can be integrated with electronic mail.
5. A system can be administered from the desktop of a City employee. City staff can provide support, rather than reliance on an outside vendor.
6. Every telephone may have an externally available phone number.
7. The systems can support Voice over Internet Protocol (VOIP) technology, which enables the City to take advantage of fiber optic and wireless links for telephones.
8. Callers can be transferred, or conference calls established, between City phones and to external phones, such as cell phones.

RECOMMENDATION

1. That the City replace the current phone system. It is unlikely that the current system can be cost effectively upgraded.
2. That VOIP be considered to achieve the goal of a single telephone system.
3. That the City use digital lines to connect to the public telephone network; in telephone language, ISDN PRI trunk service.

CAPITAL COST

Of course, costs vary. The average capital cost of phone systems is \$600 per phone, installed. The City has approximately 110 phones. A new system always has more phones than the old system. There are indirect but real expenditures to select, design, train, implement and operate a system. There are unknowns associated with use of the data network for VOIP. An estimate is \$120,000.

System Replacement Capital Cost Estimate

<i>Item</i>	<i>Count</i>	<i>Rate</i>	<i>Total</i>
Telephone system, including phones, lines for fax machines, etc	110	\$600	\$66,000
Growth	10	\$600	\$6,000
VLAN, QOS, POE adds to data network	1	\$30,000	\$30,000
System selection, design, implementation, training staff time	257	\$70	\$17,990
Total			\$119,990

OPERATING COSTS

Of particular concern are operating costs, especially the telephone bill. While an ISDN line is relatively expensive, it appears that enough other lines could be disconnected to cover the cost. An ISDN line includes 23 speech channels, judged adequate for the City's needs. A savings of \$12,000 per year is projected; the savings will probably be less, as there will be locations where Qwest business lines need to remain to support fire alarms or other unique needs. It is unlikely that the ongoing costs will be higher than current costs.

Telephone Line Costs, Monthly

Current			
Business lines	21	\$41	\$861
Voice private lines (OPX)	8	\$50	\$400
City Hall PBX trunk	7	\$40	\$280
City Hall Inbound DID trunk	4	\$55	\$220
Total			\$1,761
Projected			
ISDN PRI	1	\$725	\$725
Net Savings			\$1,036

SHARING WITH DOUGLAS COUNTY

Sharing with Douglas County can also be considered. The advantages could be ease of communication, with simplified dialing between the City and County telephones; lower operating costs, as Qwest lines could be shared; and lower capital costs, since a single system could serve both organizations. The downside of sharing is that there is overhead associated with planning and administration with another organization, and there needs to be agreement about costs and cost allocation. The key is the numbering plan. A look at the government listings in the phone book shows that both the City and County are operating with multiple prefixes, a disadvantage; it is likely that some phone numbers would need to change to integrate the systems, based upon duplication of the last three or four digits. Still, it is worth investigating the option before proceeding with a City-only plan.

SOME VOIP NOTES; OTHER CONSIDERATIONS

VOIP as a solution to on premises telephone system installations is relatively common at this point in the industry. Voice quality is pretty good; a cut below conventional if really listening for the difference, and better than cell phones. There is no standard method of preparation of the data network to carry voice. High speed data communication links, which the City enjoys due to City fiber, wireless, and Douglas FastNet connections, are a plus. However, vendors continue to recommend that customers apply some form of quality of service to the network to assure that telephone conversations don't snap, crackle and pop. Before implementing, the City should review vendor recommendations in this area, and plan to prepare the data network as appropriate.

LCOG's experience with VOIP consists of installations at a City of Corvallis fire station; some phones at the City of Springfield, also for fire stations, and at several Eugene School District 4J schools. At the City of Corvallis, the phones are on a T1 line with data traffic; the voice is in a separate VLAN; the phones run on Power Over Ethernet (POE). At the City of Springfield, the voice traffic is set with the highest priority, with no VLAN; the phones are on a Gig E backbone network, running on leased fiber; the phones are on AC adapters. At the schools, there is no special handling of the voice; the phones are on POE. All of these phones are operating satisfactorily.

Problems with VOIP include telephone move procedures. For example, if users move telephones, the software attributes of the sets can be confusing for the administrator.

Other problems include support for analog devices, such as fax machines, which can be troublesome and expensive; interfacing to overhead paging systems can be a problem, and system troubleshooting tools are just beginning to appear in the telephone systems. VOIP also costs more than conventional, though the difference is narrowing.

VOIP phones installed today are proprietary to the phone system, just as conventional telephone sets are. As phone system manufacturers begin to support standards based internet telephones, there is hope that competition and innovation will occur and users will have more choices at lower cost.

VOIP security is a real concern. Oddly enough, use of conventional lines to connect to the public phone network is a blessing; the VOIP traffic internal to the organization is not exposed in any way; there would be no VOIP packets going through the firewall. It is important to protect the PBX from hackers; the Toshiba systems cannot be connected to a network, but a replacement would be.

VOIP and E911 issues are discussed frequently in the press. In the City's case, calls to 911 should work fairly well with the current system, since most sites have separate telephone lines. In a new system as recommended, all calls made to 911 are going to show the address of the location of the main phone system. This can be addressed by subscribing to a service with Qwest to associate PBX extension numbers with addresses, if desired. LCOG has implemented this solution for the City of Eugene/Lane County system, but not the other systems.

There is a call accounting problem introduced. Currently at the City, long distance charges are made on the various Qwest lines; the charges can be identified and billed to the department making the calls and using the lines. With a VOIP system, there will be a need to develop and implement some form of call tracking, as all long distance calls will show up on a single bill.

Section 12

GEOGRAPHIC INFORMATION SYSTEMS (GIS) PLAN

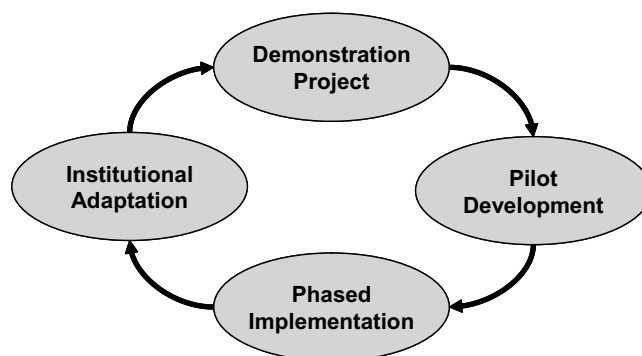
INTRODUCTION

The GIS portion of the Roseburg IT Strategic Plan provides an overview of existing GIS resources and recommendations for extending the reach of GIS within the City to improve internal operations and public service offerings. Most of the supporting information for the recommendations was drawn from a series of meetings held with City departments. While the scope of this assessment is fairly high level, it is hoped that some practical ideas are presented to aid planning and development of a shared citywide GIS.

Specific recommendations are offered in cases where they appear straightforward. In other cases, where it seemed more appropriate, specific recommendations were withheld in favor of discussion of pros and cons and alternative approaches. This is particularly true, for example, with issues relating to how the City of Roseburg should organize and staff a citywide GIS operation. There are numerous examples of small city GIS implementation successes spanning the full spectrum of organizational models, funding approaches and staffing levels. It is suggested that the City continue internal discussion of the implementation alternatives outlined in this plan.

The extent to which specific GIS implementation strategies were recommended in this IT plan was conditioned, in part, by the general preference for an incremental approach to agency-wide implementations. This approach will allow the City to gain experience with the technology, develop internal staff capabilities, and understand costs and resource requirements associated with ongoing system maintenance and expansion. The incremental development cycle is fueled by an iterative sequence of initiatives as follows: 1) demonstration of concept; 2) proof of concept pilot; 3) evaluation of potential return on investment and implementation; and 4) replicate similar implementations or explore new initiative through demonstration project as conceptualized in below.

Incremental Development Cycle



GEOGRAPHIC INFORMATION SYSTEMS (GIS)

The GIS plan is composed of four main sections and appendices including this Introduction and the following:

Geographic Activities & Applications offers an inventory of City applications and functions that can be enhanced through integration of geographic information and analysis.

Conceptual System Model examines important GIS design components including data, systems, organizational structure and staffing.

GIS Implementation Strategies incorporates information drawn from local government GIS planning studies and from past experience with GIS implementations in Lane County and elsewhere to assist further City consideration of implementation approaches.

GEOGRAPHIC ACTIVITIES AND APPLICATIONS

Virtually all of the City departments use geographic information and recognize its value in carrying out their missions and day-to-day departmental operations. Some departments already use and depend on GIS derived map or report products and support provided through the Public Works Department or Douglas County. Others maintain or have access to geographically referenced data but have not yet made use of GIS. Following is an outline of some common geographic activities.

Planning and analysis – including preliminary engineering design, permit and plan review, comprehensive planning, property owner notifications, build able land inventory, site review, crime analysis, field operations, capital improvement project planning.

Data collection & entry – including field surveys, facility inspections, property inventories, utility locates, consent tracking, and other activities that involve gathering and entering geographically referenced information like site address, parcel number, land use, etc.

Response to map & data requests – including internal queries and responding to requests for information from the public or local businesses.

Map preparation – including updating and producing copies of standard map sets, and designing and creating maps such as water and storm water utilities, zoning, City wards, streets, and parks.

A number of these activities are common among multiple departments. Some of the more common activities are:

- Response to outside information requests
- Field operations
- Address Searches
- Resident or owner mailing notification
- Map updates and production

GIS APPLICATION PRIORITIES

An initial list of 50 GIS applications has been identified and others could be added with even more to be identified in the future as the City's GIS capacity is developed. It is not feasible to pursue developing all of the possible applications at one time so it will be important for application needs to be prioritized. The application priority should be flexible to allow for changing needs, new technologies, and resource opportunities that may arise.

No attempt is made in this plan to establish a priority for citywide GIS application development but suggestions are provided with the initial intent of identifying demonstration projects that offer a relatively high potential for success. The timing for development of applications should be based first on their importance and level of interest on the part of users. Other areas for consideration are the complexity and cost of the applications and the cost and availability of the data on which the applications rely. Following is further description of some of the decision factors:

Programmatic Relationship

This factor evaluates the importance or need for the application, based on the specific mission of one or more city departments. An application may be considered more important when it serves the needs of multiple programs and when those programs are driven by strong mandates like federal or state regulations, local ordinances, City Council resolutions and official city policies.

Number of Users or Frequency of Use

This factor assesses the number of city offices and outside agencies that may be users or recipients of products from the application. It also takes into account a relative frequency of use by the current or planned activities that the applications address. A greater number of users and high frequency of use often implies higher priority.

Expected benefits

Scoring for benefits is a subjective process based on the potential tangible and intangible benefits that are expected. These benefits relate to direct gains in productivity, avoided costs, monetary savings and non-quantifiable benefits resulting from improved level of service.

Special Consideration

Special importance may be given to an application that addresses safety or health concerns; promotes economic development; or supports a program that is in high demand or is highly visible.

Database Complexity

This factor considers the complexity in building the GIS database components that are necessary to fully implement the application. Consideration is given to whether there is existing data in automated form that can be used by the application versus whether database development is highly complex or time consuming.

Implementation Complexity

Cost/Complexity reflects the relative effort required to fully customize and implement the application in an efficient user setting. Consideration is given to whether application development is straightforward, meaning that only very rudimentary customization is required and that there is a third party customization or a high level of user expertise available. Conversely, a complex development environment requires special or custom programming, the creation of an interface to a major third-party software package, or system integration efforts to fully implement the application.

Based on the factors described on the previous page, the table below indicates candidate applications having potential for early development by the City and includes relative importance and cost/complexity factors. It should be noted that several of these applications, such as utilities mapping and notification mailings based on geographic selections of parcels, are already underway at the City.

Candidate GIS Applications

Application	Department	Importance	Cost/ Complexity
Water & storm water utilities mapping	Public Works	High	Low
City land & facility tracking	City Recorder, HR	High	Low
Notification mailings	CDD, Public Works, Others	High	Low
Standard City printed map series	Multiple City Departments	Medium	Low
Consents and agreements retrieval	City Recorder	Medium	Low
Buildable lands inventory	CDD	High	Medium
Pavement management system integration	Public Works	High	Medium
Infrastructure assets data integration	Finance	High	Medium
Crime analysis	Police	High	Medium
Fire deployment planning	Fire	High	Medium
Interactive web mapping	CDD, Public Works, Parks	High	High

CONCEPTUAL SYSTEM MODEL

Goals for GIS Development

A fundamental principal guiding GIS development is greater coordination in the management of geographic information. A reduction in redundant collection and storage of information, greater consistency in that information, and a better mechanism to deliver the information to users will all have long-term benefits for City of Roseburg departments, citizens, and the local business community. Overall goals for the City’s GIS development efforts include the following:

- Make accurate and reliable land information available to users who need it.
- Ensure city staff members have “easy-to-use” tools for accessing GIS data to provide information to the public and to do their jobs.
- Establish a philosophy and framework for GIS development and operation as an integral part of Roseburg’s overall information management environment.
- Ensure geographic information is better integrated with traditional information management technology and other external systems (e.g., Permit Pack, Tiburon).
- Establish and enforce data standards to ensure consistency of information and encourage inter-departmental information sharing.

- Create an organizational and staffing structure that facilitates communication and technical support for users.
- Encourage participation and information sharing with external organizations, including Douglas County, other government and private sector agencies, and the general public.

Factors Influencing System Design

Many issues and conditions will influence the design and development of the City's GIS. For the convenience of this overview, these are organized into the following categories: 1) Data, 2) Systems, and 3) Organization & Staffing. Specific factors relevant to developing a system design are identified below.

1. Data

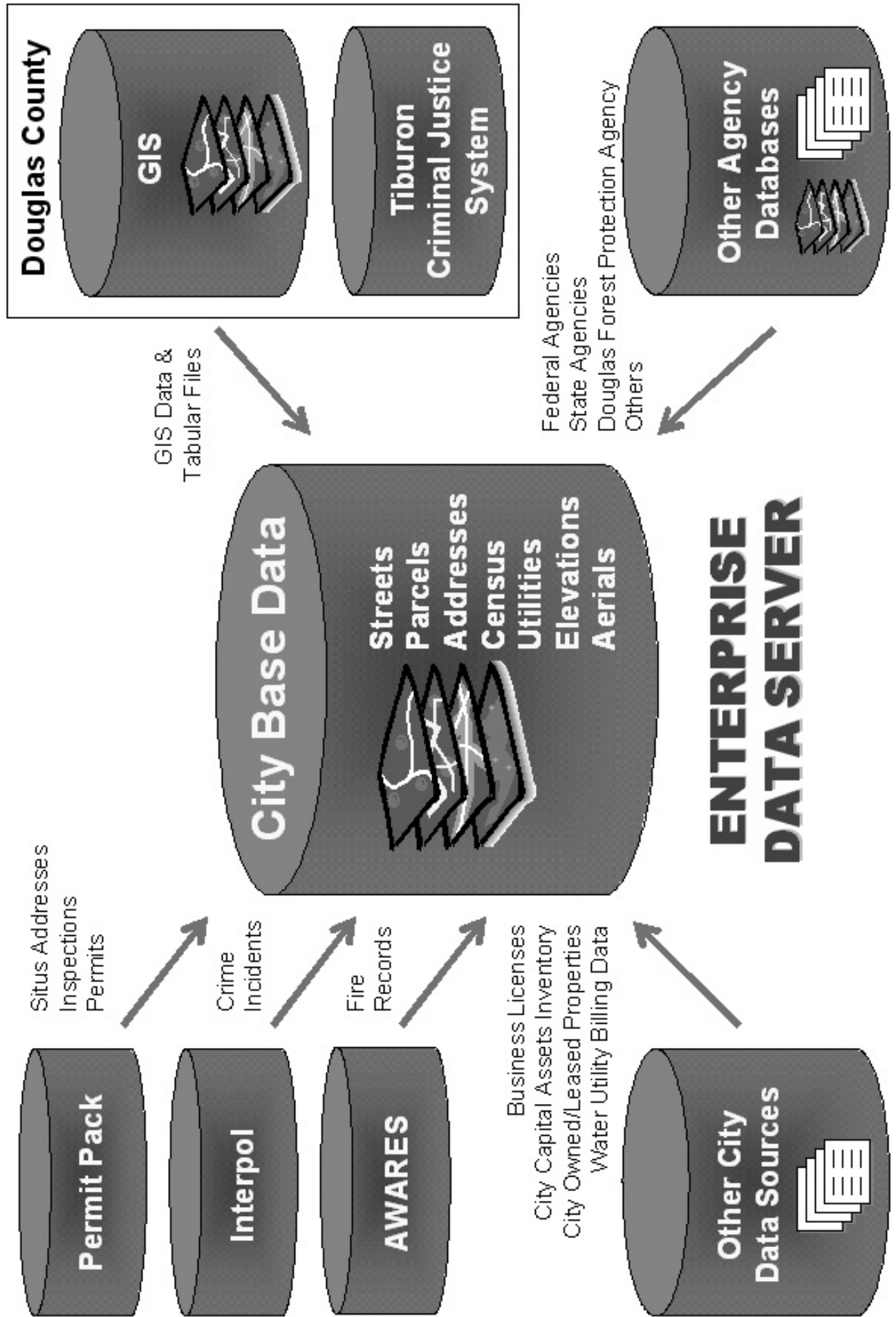
The GIS applications described previously require a reliable base map upon which all other data will be systematically built. A typical base map is a combination of layers (e.g., survey control points, road centerlines, and tax lots) which will be used as the framework for construction and or registration of additional layers. Orthophotography can also play a role as part of a basemap when it is built on control points of sufficient quality and placement to meet spatial accuracy requirements. It is important that the base map be constructed to meet the accuracy requirements of the City's intended applications.

Spatial accuracy of the GIS data layers is important when the data are to be used in support of decisions affecting City policies, financial risk, or the safety of property and lives. Additional data quality factors include reliability, consistency, and currency. For example, maps can reflect with a high degree of precision the physical location of a feature, such as an addressed building location. But, if the attributes of the feature are not reliable (for example, the Permit Pack system indicates a 4-unit apartment building and the land use layer on the GIS indicates the lot is occupied by a retail establishment) the data may not serve the needs of the City. The issue of reliability can be further exacerbated by data currency issues (for example, in the previous case where the structure may have burned to the ground or been demolished leaving the lot vacant) if the data are not updated frequently enough to reflect important changes on the ground.

The following diagram presents the concept of an enterprise GIS database that is a shared resource providing citywide benefits. The concept supports sharing of commonly used map and attribute data among multiple city departments and users. The database ideally resides on a centrally administered server that is accessible to all City users. Data with no general utility or interest or that is proprietary in nature may continue to reside on departmental servers where it can still be combined with centrally managed GIS data but is not anticipated to bring added benefits from enterprise-wide use of the data.

Enterprise data can be copied by any user into their workspace, where the data are viewed and manipulated as required. Changes and updates to enterprise GIS layers and attributes, however, can only be made by departments and users specifically authorized to insert changes. In other words, write access to enterprise files would be tightly controlled and specifically limited to the department or agency assigned responsibility for updating and maintaining those files.

Roseburg Enterprise GIS Database Concept



Specific Data Issues

- Douglas County provides data that is essential to a number of critical GIS applications including parcels or tax lots, site addresses, road centerlines, and survey control.
- The Douglas County tax lots are not currently mapped with sufficient spatial accuracy to uniformly meet the needs of some city mapping applications, such as utilities or other public works infrastructure.
- City of Roseburg GIS data are maintained and used in ESRI's Shapefile format. While Shapefiles have become a defacto GIS data format for file exchange and visual display on some desktop and web applications, the format imposes limitations on data analysis and maintenance.
- It is not clear that enterprise type GIS data are centrally maintained, organized, and documented in a way that would facilitate citywide access and sharing.
- Current data maintenance practices are ad hoc creating some uncertainty about data currency and who is responsible for regular maintenance.
- Linkages between GIS map features and corresponding attributes from relational database management systems and other city business systems are not in place or currently are made only on an ad hoc project basis.

2. Systems

The hardware, software, and network systems are in place to support a limited GIS implementation including: PC workstations suitable for running GIS software; one floating license for ESRI's ArcEditor 9.X software; one floating license for ESRI's ArcView 9.X software; one license for ESRI's ArcPublisher software; one large format scanner; one HP 4500 DesignJet large format printer and a number of small format color printers. The City has a connection to Douglas County's local area network which can be used to access files and transfer data. Roseburg does not currently make use of an intranet but does host a city Internet site through an outside ISP, Douglas FastNet. The Internet site provides public access to static content including PDF and AutoCAD format map files.

Specific Systems Issues

- The City's ArcEditor software is adequate for much of the current mapping and data viewing applications but does not support some advanced GIS functionality. The ArcView software does not offer the data maintenance tools needed to maintain ESRI's current Geodatabase data format.
- The Douglas County Assessor and Public Works Departments use a GIS system from Intergraph Corporation called GeoMedia. Both the County's Intergraph system and Roseburg's ESRI systems can exchange data via standard import and export formats such as Shapefiles or DXF.
- The City maintains a significant quantity of useful geographic information that is not currently being combined with GIS data for mapping or spatial queries and reporting. For example, crime incident data resides on the Tiburon public safety system at the Douglas County Sheriff's Office. Routine access to extracts of this data made available on a server accessible to City GIS users would unlock significant crime mapping opportunities.
- Currently, GIS data reside on user workstations scattered within the City in the absence of a centrally shared and administered data repository.
- Public Works Department staff members have strong interest in using GPS and hand-held devices or laptop computers in the field to aid data collection and maintenance operations.

3. Organization & Staffing

The third factor influencing Roseburg's GIS system design relates to trained staff resources and organizational issues. Currently, the City has a limited number of staff with extensive GIS training and experience. The Public Works Department has 1 FTE staff essentially dedicated to GIS support for both Public Works and other city departments seeking assistance. The Community Development Department has addressed the recent loss of a Planner with GIS skills by filling the vacancy with a person possessing GIS experience. In addition, a few staff members residing in Community Development and the Fire Department possess limited GIS skills based on occasional GIS use for data collection or mapping and reporting project support.

The availability of citywide GIS support through the Public Works Department is relatively recent. Some city departments are now requesting assistance with maps, reports, mailing lists, data development, and other technical matters through Public Works. Other departments, such as Fire, continue to obtain GIS assistance from GIS staff in the Douglas County Public Works Department. In the past, the City also relied on the Umpqua Regional Council of Governments (URCOG) for GIS support and services. With the recent termination of the URCOG GIS and planning functions, some technical GIS assistance has also been obtained through Lane Council of Governments (LCOG).

Specific Staffing Issues

- The City's lead GIS staff member from the Public Works Department is developing GIS skills working off-site on data development at LCOG's office in Eugene one-day per week.
- Staff training will be an ongoing concern as city GIS support roles are clarified, departmental users are identified, and as the hardware and software technology continues to evolve.
- The City participates in periodic local meetings of the Umpqua Basin GIS Users Group (UBUG) and carries out informal ad hoc coordination with GIS staff at Douglas County.
- Some city staff members expressed interest in user friendly web-based applications that provide access to geographic information and spatial analyses (e.g., buffer generated mailing lists and geocoded addresses) without the need to learn how to use desktop GIS software.
- The City will need to assess adequacy of the current GIS staffing level and in-house capacity to centrally service GIS support and products once ongoing GIS data maintenance and product needs are fully defined. Given the range of interests in GIS support identified in this Plan, it would appear that the City will require additional staffing or outside assistance to meet expectations.
- It would not be unreasonable for the City to plan initial GIS development around the combination of a lead support department (e.g., Public Works) and Information Services in order to more effectively coordinate and manage efforts. A more centralized initial approach will also help minimize redundant and scattered data development efforts that can make more difficult City efforts at implementing enterprise solutions.

GIS IMPLEMENTATION STRATEGIES

This section offers GIS implementation strategies for the City of Roseburg based on discussions with department heads and staff as well as experience assisting other cities. Both short- and long-term action items are presented for the principal system components including: GIS applications, data, systems, organization and staffing.

Applications

1. Evaluate Options for Providing Broader Access to GIS Tools

Evaluate options for rolling-out easy-to-use access tools both citywide and for individual departments. It is not practical to install GIS software in each department and train large numbers of users to use software that only a few will require on a daily basis. A range of alternatives exists and should be considered along with candidate projects for pilot demonstrations and full implementation.

Distributed desktop applications based on ESRI's ArcReader can be developed relatively quickly and inexpensively given that the City already owns an ArcPublisher license to publish the PMF format map files and the ArcReader viewer can be freely downloaded. The concept behind this approach mirrors Adobe's Acrobat and Reader software (think of ESRI PMF files as being like PDF's with a focus on maps rather than documents).

Citywide web-based applications can be deployed on the Internet (where public access is desired), a city intranet (offering essentially the same application options but for internal network or city staff only), or a combination of both. Similarly, a number of server-based enterprise GIS solutions are available either off-the-shelf or through internal or outsourced custom development. An increasing number of these solutions integrate GIS and standard local government business systems providing opportunities to upgrade or replace other components of the City's operations. These options should be considered as part of a longer term enterprise implementation strategy.

2. Integrate Non-GIS Information with GIS

A number of candidate projects are available to improve current City operations and demonstrate the utility of GIS beyond simple map production. One or more demonstration projects should be developed to help introduce GIS capabilities to city departments that are not currently taking advantage of the technology. Possible candidates might include:

- A series of crime analysis maps and reports can be produced for the Police Department if selected crime incident data can be exported from Douglas County's Tiburon Public Safety system and assembled in the GIS.
- A series of maps or an ArcReader application can be developed to integrate City owned and leased properties with GIS to support spatial analysis and viewing by the City Manager, Recorder, Human Resources, and other departments.
- Critical city infrastructure databases and asset inventories can be linked to GIS features to support capital planning and GASB 34 reporting by Finance; pavement management and storm run-off analyses by Public Works; and field operations by Fire, Police, and Public Works staff using either hard-copy maps, geographically indexed reports, GPS-enabled laptops or PDAs for information query and viewing.

Data

From the Inventory of GIS Data presented, it is apparent that the City already has a reasonable starting point with respect to digital data. However, as noted previously, the quality and reliability of the data are critical to GIS applications. A number of important actions are needed with regard to GIS data.

1. Identify Critical Missing Data

Once the City has prioritized its GIS applications, it will be possible to review the existing data to determine shortcomings and need for additional digital data. It is not uncommon for needed data files to be missing or for available GIS data to fall short of expectations for one or more potential

applications depending on the source of the data, its currency, completeness, spatial accuracy, etc. However, it is important to realistically assess application objectives and determine mitigating factors or steps needed to provide suitable data.

A critical review of the currently available data by City users can help focus needed efforts to obtain missing data files, identify need for conversion of existing paper or digital data sources, and establish a priority agenda for data development and enhancement. The process of reviewing available data, obtaining new data, and ensuring ongoing data maintenance and quality assurance is a continuing one that will evolve as the City's GIS user community grows and their needs evolve.

2. Develop Citywide Data Maintenance Plan

Building on the GIS data inventory, it must be recognized that in order to ensure quality and reliability the City must develop a maintenance plan and metadata (information about the data informing users about its content and appropriate use). The plan should recognize the value of reducing redundant data maintenance and capturing data and updates as close as possible to the source. It will encompass both intra- and inter-agency data flows that take advantage of strategic data sharing and exchange opportunities. The maintenance plan will also acknowledge funding and resource realities and set appropriate data acquisition and maintenance priorities.

It is a good idea to begin developing the plan as well as a system for storing and reporting metadata as early as possible and recognize that it will be a living document that, itself, will require regular maintenance as needs change and opportunities present themselves. The plan should include who is responsible for maintaining each file; minimal standards for spatial accuracy and currency; best maintenance practices; and detailed metadata about the data content and coding schema. The plan should also address how missing or needed data are to be obtained or developed over time.

The Maintenance Plan will also need to address the question raised previously in this document of an optimal data model for the City. As noted, the City currently maintains a collection of Shapefiles to support its GIS applications. This is a workable short-term arrangement but introduces problems and limitations as the City looks to more broadly implement GIS and take advantage of more advanced capabilities presented by ArcGIS software and associated third-party vendor offerings.

3. Plan Migration of GIS Data Holdings to ESRI's Geodatabase Format

A number of standard ESRI GIS data models are emerging that can help the City in the development of its GIS. To take advantage of the current and future capabilities of this system coming at version 9.2, the City should plan for the migration of its GIS data from Shapefiles to file-based Geodatabases residing on a centralized GIS data server. This will not create immediate need for changes to the City's GIS software licensing but does imply the need for additional user staff training (principally Noriko).

4. Coordinate Basemap Enhancements with Douglas County

An important data source for City GIS mapping and analysis is tax lots provided by the Douglas County Assessor's Office. Tax lot lines serve to define a number of administrative and service area boundaries and provide important information about property characteristics and ownership when overlaid with City infrastructure, orthophotography, and other mapped features. As described previously in this plan, the spatial accuracy of the Douglas County tax lot data is important to the City and will significantly impact a great number of current and future GIS applications.

In April of 2006, the City initiated a meeting with Douglas County representatives to discuss issues pertaining to the spatial accuracy of the County's tax lot data. Additional inter-agency discussions should be pursued and concerted efforts should be made to define the mutual benefits and terms under which the City and County can cooperatively advance improvements to this important data source. Consideration should be given to definition of City spatial accuracy requirements for tax lot lines and establishment of mutually supportable data standards for the county-maintained digital data.

Systems

Modern GIS systems are becoming more standard with respect to their place in the larger IT world. They are designed to integrate with standard relational database management systems (RDBMS) and can reside on central enterprise servers offering potential for more complete integration with standard business systems and functions. For some organizations, central server deployment makes it easier and more cost efficient to provide distributed GIS tools on multiple desktops across the organization depending on the numbers of users and types of tools. The following short and longer term systems actions should be considered.

1. Secure funding for selected systems upgrades

The City should consider opportunities to upgrade GIS systems components including:

- Acquire additional large format printer or replace existing HP 750c printer (check availability of URCOG's HP 4500 DesignJet printer).
- Check requirements for acquiring or configuring central GIS database server(s) to store shared GIS data, digital orthophotography, scanned document images, and data extracts from external sources.
- Possible GIS software license additions or upgrades depending on City's future direction with GIS organization and staffing.

Organization and Staffing

There are many paths for building GIS capacity at the City of Roseburg and for integrating and coordinating GIS resources and information that reside within city departments. How the City approaches organizing and staffing its GIS support functions is as key to their ultimate success as having quality data and systems. This section looks at the pros and cons of selected GIS management alternatives, support alternatives, and staffing roles. The alternatives are outlined below in order to promote discussion with the City of their relative merits and appropriateness.

Management Alternatives

One common management feature of many successful sites is the existence of an executive who has taken personal interest in the development of the system and is the political champion of the system. Management input or lack thereof can have a critical impact on development of a successful GIS. Successful sites also typically provide a mechanism for user departments to explore issues, resolve conflicts, and pool resources. In addition, these sites provide means by which both management and technical input can be provided. Several management alternatives exist including:

1. None—no upper management direction

The information is managed by technical staff to meet specific department needs. Technical staff often communicate by committee to address specific technical issues that are then resolved within existing department structures.

Pros:

- Very little management overhead
- Most technical issues are adequately dealt with
- Issues that are important to a specific department are addressed by that department

Cons:

- No real management input
- Difficult to resolve inter-departmental conflicts
- Difficult for City to ensure efficient use and sharing of resources
- Difficult to develop long-term funding

2. Committee Structure

A committee structure is established to address management issues such as establishment of strategic directions and funding. The management committee could be a new or existing committee and could be supported by assigned technical staff or could obtain inputs from a technical support committee.

Pros:

- Management issues can be met
- Mechanisms exist to manage interdepartmental issues
- More departments working together means a larger funding pool

Cons:

- Has overhead
- Requires additional education of managers
- Management committees may select alternatives not acceptable to specific departments

3. Department Support

One department gets management authority for the system and determines strategic directions for the system. The coordinating department usually manages user input and support. Coordinating departments could be a large department, such as Public Works, or a service oriented department, such as Information Services.

Pros:

- Clear line of responsibility and funding
- System has a champion

Cons:

- Some departments feel left out and that their needs are not being met
- If the department has another function, the GIS support function may compete with it for support and funding

Support Alternatives

Beyond the basic division of system management responsibilities lies the issue of degree of centralization of the shared GIS. With regard to system organization and administration, centralized versus decentralized is not so much an either/or issue as it is one of degree. Further, it is not uncommon for organization of GIS support to evolve over time as the community of users grows and matures. A brief discussion of both centralized and decentralized support approaches follows.

Centralized Support Approach

Under this more centralized approach, the service department is responsible for technology, data content, and technical support. User departments fund the service department through annual fees or charges for specific projects. User departments identify their needs and request support from the service department. Large projects that require major funding may be covered by the general fund or by combining resources from interested departments. User departments have a user committee, and occasionally a management committee to manage service direction and support.

This approach has the advantage of unified control, simple structure, and efficient management. It may also offer the most effective way to initially bring about a coordinated and shared departmental effort to implement GIS. Its disadvantage is the potential lack of responsiveness to users that may result when the needs of individual departments are balanced against priorities of the broader community of City users.

Distributed Support Approach

The second approach distributes support responsibilities to a greater extent among the participating departments. Under this approach, each department is responsible for its own applications, data and trained GIS user staff. Departments are relatively free to fund activities in whichever ways meet their needs. Some organizations have the technical staff participate in a committee to coordinate common needs and directions.

This approach has the potential advantage of greater responsiveness to user needs and improved flexibility from the perspectives of individual participants. Each user department would have greater latitude in managing its resources to support its functions. The principal disadvantage of a decentralized approach at the City of Roseburg is the limitations imposed on small departments that lack the staff to support their respective needs. A second disadvantage is potential difficulty coordinating the activities of multiple departments and associated problems of more costly data redundancy, duplicative staff roles, hardware and software resources.

Other Organizational Considerations

Role of GIS Coordinating Body

Regardless of how GIS support is organized, City departments need mechanisms to share and discuss common needs (usually a committee), and to balance benefits and costs in line with the larger organization's needs. A GIS coordinating body, commonly referred to as a task force, steering committee, or advisory group, is appropriate for either a relatively centralized or decentralized GIS organization. Within a centrally managed organization, the coordinating body provides a forum for individual participants to offer input and helps ensure that central management is in touch with the needs and desires of the users. Conversely, within a decentrally managed organization the coordinating body serves the principal role of coordinating the various activities of the GIS participants and ensuring the larger needs of the City are being met.

Participation by Outside Organizations

A factor complicating the management and organizational structure of the GIS is the potential participation (i.e., sharing GIS use and its costs) by entities outside of the City such as Douglas County. Two principal kinds of participation by non-City agencies are possible, including: (1) separate system implementations with ad hoc sharing of data and applications, and (2) agency cooperation with some shared or coordinated activities. Variations on these basic alternatives are also possible. The City management structure should, therefore, be flexible enough to take advantage of potential

opportunities resulting from participation by outside agencies should such participation be deemed desirable. For example, an informal relationship exists with Douglas County through which data files are exchanged and support services are provided by County GIS staff when requested by the City. More formal partnering arrangements are possible to help ensure City data needs are met for some County-provided data or to enable sharing of intranet or other network-based GIS services.

Typical Staffing Roles

A broad range of staff roles and functions is typically required to provide for the needed administrative and technical skills to support a shared GIS. These roles are useful for defining what staff capabilities are required for operation of the GIS and are not intended to delimit the respective responsibilities of existing or future personnel. Actual staff requirements and responsibilities depend on a number of factors including size of the organization, nature of the organization (i.e., centralized versus distributed), extent of GIS usage, and staff capabilities and skills. Typically, staff responsibilities are dynamic in nature. In the early stages of system development, one person may fill many of these roles. As the system evolves, responsibilities are distributed and staff will tend to become more specialized. Descriptions of these typical roles follow.

Coordinator/manager

In a small organization, one person may perform both high-level and technical-level management duties. The staff in this role will facilitate the GIS management committee or manage the GIS services function. The manager will be the system champion and will assist departments in establishing system priorities and coordinating GIS support.

System Administrator

This role ensures that the hardware and software infrastructure is appropriate for the selected GIS functions and that GIS facilities are functioning properly. The role requires knowledge and experience maintaining computer systems, including hardware, software, telecommunications and other systems features.

Database Administrator

The data administrator will ensure that data are stored, documented and made available in an appropriate manner to users and applications. The Administrator plays a primary role in designing, creating and maintaining GIS databases and facilitating integration with other geographically referenced data sources.

GIS Analyst

The Analyst typically works in a user department to support GIS needs within the department. They are expert in both GIS and the business of the department. This person will create data, maps, analysis, reports, and will sometimes create custom GIS interfaces for GIS users.

Data Maintenance Staff (Cartographer/CAD Operator)

Data maintenance staff may maintain data layers as part of doing business or may build and maintain data as projects. These staff will have a very good understanding of the data being maintained and the tools used to maintain the information.

Casual GIS User

The casual user understands how to operate simplified GIS applications that are stand-alone or imbedded into applications. The casual GIS user only understands basic GIS functionality, has a good understanding of data used day-to-day, and knows how the application fits into the current business environment.

Staff training

The staff that use and support GIS will require special training in GIS technology to perform their respective functions. The following table presents a general overview of the typical levels or types of GIS users and associated GIS software and training they require.

GIS Software and Training Needs Identification

LEVEL	USER TYPE	DESCRIPTION	SYSTEM	TRAINING
1	Non-User or Indirect User	Do not access computer as part of work duties and do not use information/products pertaining to land information. Or, only periodically use land information and products to support duties.	<ul style="list-style-type: none"> • Hard copy products 	<ul style="list-style-type: none"> • No training specified
2	Occasional User	May use computer as part of work duties and directly access digital land information on infrequent to periodic basis. May also indirectly use land information and products.	<ul style="list-style-type: none"> • Hard copy products • Custom web or desktop application • ArcReader 	<ul style="list-style-type: none"> • Custom application training
3	Regular GIS User	View, query, and maintain GIS data for project work and require direct access to land information and products on routine basis.	<ul style="list-style-type: none"> • ArcReader • ArcView • Custom web or desktop application 	<ul style="list-style-type: none"> • Vendor product training • Custom application training
4	GIS Professional (Advanced)	Full-time user of GIS and related products. Customize applications and use programming tools on routine basis to analyze and manage data and produce products.	<ul style="list-style-type: none"> • ArcView • ArcEditor • ArcInfo • Custom web or desktop application 	<ul style="list-style-type: none"> • Vendor product training • Custom application training

Definitions:

- (1) *Indirect* usage - View or use physical hardcopy output from GIS rather than interactively query online databases.
- (2) *Direct* usage - Use GIS or other software to access, view, manipulate or otherwise use digital data.
- (3) *GIS Products* - Include hardcopy maps, tabular reports, or other output generated through analysis by the GIS.
- (4) *ArcReader* - Free downloadable GIS data browsers from ESRI (that reads Shapefiles and other data formats).
- (5) *Custom Application* - Includes reporting and GIS data viewing applications (e.g., customized ArcIMS, ArcServer, ArcEngine applications or off-the-shelf vendor provided software) developed for desktop or web deployment.

Implementation Strategy Overview

An overview planning timeline for the Roseburg GIS implementation strategies outlined in this section is provided in below. Actual timeframes will be dependent on City priorities and available resources.

GIS Implementation Strategy Planning Timeline*

Activity	FY2007	FY2008	FY2009	FY2010
Explore acquisition of URCOG GIS assets	■			
Plan/initiate demonstration projects	■	■	■	■
Explore strategic partnerships with Douglas County	■	■		
Develop/Review City GIS implementation plan	■	■	■	■
Develop City GIS database design		■		
Develop/Review City data maintenance plan		■	■	■
Review GIS systems needs/acquisition planning		■	■	■
GIS database development		■	■	
Enterprise GIS applications development		■	■	■
GIS support & user staff training	■	■	■	■

* Note: The GIS strategic plan is intended to stimulate discussion of City goals and opportunities which, in turn, should feed into decisions about GIS organization and management. Once an internal decision-making structure is in place for City GIS development, implementation strategies and activities can be better defined, resources better delineated, and timelines refined.

City of Roseburg Department Meetings

Provided below are summary notes from the GIS needs meetings held in Roseburg on May 26 and June 2.

Agency	Roseburg Police Department
Meeting	9:30 am – 11:00 am May 26, 2006
Participants	Mark Nickel, <i>Police Chief</i> Yvonne Russell, <i>Staff Assistant</i> Aaron Dunbar, <i>Community Resources</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i> Warren Roe, <i>LCOG</i>
General GIS Goals	Crime Mapping
Maps & Reports	<ul style="list-style-type: none"> ▪ No standard map products ▪ Crime Activity Statistics ▪ Comparative Crime Statistics
Systems & Databases	<ul style="list-style-type: none"> ▪ Tiburon Criminal Justice System suite (includes dispatch and records management). ▪ Interpol (Lotus Notes application)—includes 2005 and earlier data not loaded to Tiburon system. ▪ Douglas County Sheriff's Office provides crime statistics using Crystal Reports. ▪ Dispatch uses MapStar software from Plant Equipment Inc. ▪ Crime data geocoded to situs addresses, road centerline "blocks", intersections, and places or landmarks.
Opportunities	<ul style="list-style-type: none"> ▪ Potential gains, initially, from viewing and reporting geographic distributions of crime statistics (pin maps, hot spots, patrol-briefing maps, etc.) and, eventually, from advanced data analysis and mobile applications. ▪ Patrol cars are equipped with laptop computers.
Issues	<ul style="list-style-type: none"> ▪ Virtually all of the department's crime data resides in the Tiburon system which does not provide all of the query, mapping and reporting capabilities that the department needs. ▪ Manual data entry and manipulation needed to combine comparative crime statistics from Tiburon system and other sources.

Agency	Roseburg Fire Department
Meeting	11:00 am – 12:30 pm May 26, 2006
Participants	Jack Cooley, <i>Fire Chief</i> Amy Anderson-Rice, <i>Secretary</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i> Warren Roe, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ Fire Deployment Plan support ▪ Fire Station Location studies ▪ Ad Hoc Mapping and Reporting
Maps & Reports	<ul style="list-style-type: none"> ▪ Four-Minute Response Time Map (produced by Douglas County) ▪ Fire Deployment Plan
Systems & Databases	<ul style="list-style-type: none"> ▪ AWARES (State of Oregon Access database) ▪ Computer-Aided Management of Emergency Operations (CAMEO) and Hazardous Substance Information Survey (HSIS) used for hazmat storage and location information. ▪ Data of interest: aerial imagery, road centerlines with address ranges, storm drains, sewer system, vegetation models, topography, stations, hydrants, Knox Box locations, sprinklered building locations, hazmat locations, intersection traffic counts, Assessor data.
Opportunities	<ul style="list-style-type: none"> ▪ Improved mapping and analysis for tactical planning, response, and reporting. ▪ Fire vehicles are equipped with laptop computers.
Issues	<ul style="list-style-type: none"> ▪ Use Douglas County for primary GIS support—provides good support but not always timely. ▪ Some data files, such as road centerlines, may require improvements to optimally support fire applications such as network analysis for response analysis, facility siting, etc. ▪ Tiburon system supports police dispatch but does not include Fire module.

Agency	Roseburg Community Development Department
Meeting	10:00 am – 11:00 am June 2, 2006
Participants	Fred Alley, <i>Director</i> Dick Dolgonas, <i>Community Planner</i> Teresa Clemons, <i>Community Planner</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ Improve public access to maps and information to reduce requirements on staff time. ▪ Expand in-house mapping capabilities and project support. ▪ Improve quality of visuals for UGB expansion project.
Maps & Reports	<ul style="list-style-type: none"> ▪ Zoning Map ▪ Comprehensive Plan Map ▪ Ad Hoc reporting from Permit Pack
Systems & Databases	<ul style="list-style-type: none"> ▪ Permit Pack (in use since ~1992) based on MS Access database ▪ ArcView 9 (3 floating licenses)
Opportunities	<ul style="list-style-type: none"> ▪ Post standard map series to City website. ▪ Develop user-friendly standard GIS applications for common functions: map printing, mailing label creation, data viewing and query. ▪ Develop additional GIS data including building footprints, local wetlands and other natural resources inventories, land use, and others. ▪ Establish ongoing GIS data maintenance responsibilities and standards.
Issues	<ul style="list-style-type: none"> ▪ Permit Pack system is central to department permitting and data maintenance operations but in-house developer has retired and no regular maintenance and support are available for the system. ▪ Department has three ArcView 9 software licenses but limited training and staff expertise to fully use the software. ▪ Key department mapping functions depend on Douglas County provided tax lots data but periodic data acquisition is not optimized to ensure City needs are fully met.

Agency	Roseburg Human Resources Department
Meeting	11:00 am – 11:30 am June 2, 2006
Participants	Barbara Gershon, <i>Human Resources Director</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ Maintain current spatial inventory of City-owned properties.
Maps & Reports	<ul style="list-style-type: none"> ▪ Inventory of buildings (includes site addresses, # employees)
Systems & Databases	<ul style="list-style-type: none"> ▪ Spreadsheet inventory of City owned properties. ▪ City owned structures condition survey. ▪ Property Appraisals.
Opportunities	<ul style="list-style-type: none"> ▪ Improve both City risk management capabilities and efficiency of property management through spatial viewing and query of properties and ability to link additional data sources (Assessor's records, images, off-line records). ▪ Additional City website job information content could be posted (e.g., job titles and salary ranges) to reduce staff time responding to requests for this information.
Issues	<ul style="list-style-type: none"> ▪ Citywide procedures needed to ensure all City-owned property and assets of interest to the City are maintained in the inventory.

Agency	Finance Department
Meeting	1:30 – 2:00 pm June 2, 2006
Participants	Cheryl Guyett, <i>Finance Director</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ GIS-based physical asset database or GIS-interfaced asset management system to achieve GASB 34 financial reporting requirements. ▪ Geographic reporting of City capital assets based on Urban Renewal and local improvement districts.
Maps & Reports	<ul style="list-style-type: none"> ▪ City infrastructure inventory and appraisal information
Systems & Databases	<ul style="list-style-type: none"> ▪ Water Utility Billing System ▪ Court clients database ▪ Budget spreadsheets
Opportunities	<ul style="list-style-type: none"> ▪ Integration of capital assets inventory with GIS-based infrastructure data such as roads, bridges, utilities, lighting systems, hydrants, etc. ▪ Automated tools integrated with GIS for capital improvements and infrastructure maintenance planning and budgeting.
Issues	<ul style="list-style-type: none"> ▪ Improvements to both GIS data and data maintenance needed to effectively support tighter integration with capital assets records. ▪ No determination made regarding whether local GIS-linked asset inventory or full vendor-provided asset management software would best meet City requirements.

Agency	Roseburg Public Works Department
Meeting	2:00 – 3:30 pm June 2, 2006
Participants	Clay Baumgartner, <i>Public Works Director</i> Dick Hutton, <i>Engineer</i> Bill O'Byrne, <i>Water Superintendent</i> Bill Quimby, <i>Street Superintendent</i> Barbara Taylor, <i>Parks Planner</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ Provide standard and up-to-date utilities maps in both digital and hard copy formats. ▪ Obtain GPS unit for field data collection and location. ▪ Explore utility of hand-held field data and mapping devices. ▪ Improve public access to maps and information to reduce requirements on staff time.
Maps & Reports	<ul style="list-style-type: none"> ▪ Water & storm water basemaps
Systems & Databases	<ul style="list-style-type: none"> ▪ Cartegraph (sign inventory) ▪ Permit Pack (used for site review, inspections) ▪ ArcEditor 9 (one floating license)
Opportunities	<ul style="list-style-type: none"> ▪ Develop user-friendly standard GIS applications for common functions: map printing, mailing label creation, data viewing and query. ▪ Develop GIS link to inventories of hydrants, street trees, capital improvement and other projects. ▪ Map irrigation lines and valves for City maintained parks. ▪ Establish ongoing GIS data maintenance responsibilities and standards. ▪ Establish aerial imagery acquisition plan (in conjunction with Douglas County) to ensure regular orthoimagery update cycle.
Issues	<ul style="list-style-type: none"> ▪ Interest expressed in larger central GIS support role for Public Works. ▪ Additional GIS training needed to support central services role. ▪ Additional GIS capacity (staffing and systems) may be needed depending on desired level of citywide service/support.

Agency	Roseburg Recorder
Meeting	3:30 – 4:00 pm June 2, 2006
Participants	Sheila Cox, <i>Recorder</i> Noriko Corrado, <i>PW Engineering Technician</i> Eric Brandt, <i>LCOG</i>
General GIS Goals	<ul style="list-style-type: none"> ▪ Ward Maps for City Council ▪ Maps of City owned and leased properties with values ▪ Map of commercial businesses located in Roseburg ▪ Query tool to check site address ward assignments ▪ Spatial index to query and report on consent and other agreements ▪ Detailed airport map (including tenants)
Maps & Reports	<ul style="list-style-type: none"> ▪ Tabular listings of City-owned and leased properties (Clerk's index) ▪ Business registry ▪ Agreements records
Systems & Databases	<ul style="list-style-type: none"> ▪ Non-digital documents files with digital index
Opportunities	<ul style="list-style-type: none"> ▪ General operational and efficiency benefits from improved access to shared City and County data. ▪ Scanning of City recorded documents to support online integration with GIS and other database systems for improved information access.
Issues	<ul style="list-style-type: none"> ▪ Most document records are currently non-digital.

Provided below are summary notes from the joint City of Roseburg and Douglas County meeting held in Roseburg on April 26 to explore options for cooperative efforts to improve the spatial accuracy of Douglas County digital tax lot data within the Roseburg UGB.

Agency	Roseburg Public Works; Douglas County Surveyor, Assessor, Public Works; OBEC; LCOG
Meeting	1:30 – 3:00 pm April 26, 2006
Participants	<p>Clay Baumgartner, <i>Roseburg Public Works Director</i> Jim Kent, <i>Roseburg City Engineer</i> Noriko Corrado, <i>Roseburg PW Engineering Technician</i> Kathy Thompson, <i>Douglas County Engineering Systems Specialist</i> Dave Matheny, <i>Douglas County Chief Deputy Assessor</i> Wendell Lewis, <i>Douglas County Assessors Office</i> Terrie Franssen, <i>Douglas County Surveyors Office</i> Mark Armstrong, <i>OBEC</i> Eric Brandt, <i>LCOG</i></p>
Discussion	<p>Issues were raised concerning the spatial accuracy standards for Assessor mapping of the tax lots within the City of Roseburg.</p> <p>Discrepancies between the City's 2003 digital orthophotography (based on 1998 survey control) and spatial registration of Douglas County tax lots were discussed.</p> <p>Opportunities for the County under the ORMAP program to make accuracy improvements to meet Goal 4 in the Roseburg urban area were discussed.</p> <p>Opportunities for the City to obtain contracted services through OBEC for acquisition of survey control points to calibrate to existing County control and provide additional control points evenly distributed across the Roseburg UGB were discussed.</p>
Opportunities	<ul style="list-style-type: none"> ▪ Cooperative City/County partnership to jointly acquire and apply additional survey control to tax lot mapping within city. ▪ City funding for improved control and County data adjustments during normal mapping operations in city to provide improved quality data and ensure common use of shared parcel basemap between jurisdictions.
Decisions	<ul style="list-style-type: none"> ▪ Douglas County Assessor's Office to review City offer and explore options of mutual jurisdictional interest.

City of Roseburg Potential Applications

Applications would need to be prioritized based upon priority criteria in section 1.

Development Review & Tracking

1. Building permit application review
2. Demographic mapping and analysis
3. Facility permit review
4. Assign & manage special assessments
5. Zoning & building appeals
6. Zoning & building violations

Financial Assessment & Risk Management

7. City land & facility inventory tracking
8. Infrastructure costs and spending

Facility and Asset Management

9. Pavement management
10. Work order hot spots
11. Sign inventory
12. Building facility management
13. GASB 34 financial reporting

Geographic Index & Document Retrieval

14. Water utility billing
15. City owned/leased properties
16. Easement records
17. Hydrant records
18. Plans and as-builts
19. Consents & agreements

General Geographic Queries and Display

20. Interactive web mapping
21. Standard city printed map series
22. Address searches
23. Parcel ownership searches
24. Road/street searches and routing
25. Zoning map searches
26. Land use searches
27. Disaster planning

Incident Mapping and Analysis

28. Crime analysis
29. Fire response analysis
30. Business registry
31. Traffic accidents

Map updates

32. Water & storm water utilities
33. Roads
34. Site addresses
35. Zoning

Network Analysis

36. Fire deployment planning
37. Water system
38. Vehicle routing

Notification Mailings

39. Re-zoning hearings
40. Road hearings
41. Annexations
42. UGB expansions

Spatial Analysis and Modeling

43. Buildable lands inventory
44. Permit analysis & research
45. Zoning change & compliance analysis
46. Transportation planning & design
47. Service/customer accessibility
48. Patrol areas

Work scheduling

49. Inspections
50. Road work order & dispatch

City of Roseburg Inventory of GIS Data

A partial inventory of GIS data currently available at the City of Roseburg is listed below.

Data	Format	Source	Maintained?	Frequency
Bus Routes/Stops	Shapefile			
Geotechnical	Shapefile		no	
Gas Service (Avista Facilities)	Shapefile	Avista	yes	
¼ Sections	Shapefile	Douglas County	no	
Bridges	Shapefile	Douglas County	yes	periodically
DLC	Shapefile	Douglas County	no	
Parcels	Shapefile	Douglas County	yes	weekly
PLSS Survey Points (NAD27)	Shapefile	Douglas County	yes	
Railroads	Shapefile	Douglas County	no	
Road Rights-of-way	Shapefile	Douglas County	yes	monthly
Sections	Shapefile	Douglas County	no	
Situs Address Points	Shapefile	Douglas County	yes	weekly
Streams	Shapefile	Douglas County	no	
Townships	Shapefile	Douglas County	no	
US Census Blocks	Shapefile	Douglas County	no	
Waterbodies	Shapefile	Douglas County	no	
City Limits	Shapefile	Roseburg CDD	yes	periodically
Comprehensive Plan	Shapefile	Roseburg CDD	yes	periodically
Historic Districts	Shapefile	Roseburg CDD	yes	periodically
Land Use (Roseburg)	Shapefile	Roseburg CDD		
Parks (Points)	Shapefile	Roseburg CDD		
UGB	Shapefile	Roseburg CDD	yes	periodically
Urban Renewal Districts	Shapefile	Roseburg CDD	yes	periodically
Zoning	Shapefile	Roseburg CDD	yes	periodically
City Council Wards	Shapefile	Roseburg PW	yes	periodically
Elevation Contours (2-foot)	Shapefile	Roseburg PW	no	
Road Centerlines (Roseburg)	Shapefile	Roseburg PW	yes	monthly
Stormwater System	Shapefile	Roseburg PW	yes	periodically
Water System	Shapefile	Roseburg PW	yes	periodically
Wetlands (NWI)	Shapefile	US EPA	no	
Flood Zones (FIRM)	Shapefile	US FEMA	no	
Soils	Shapefile	US NRCS	no	
2002 Color 6" Orthophotography		3Di West	no	infrequently