MENDOCINO COUNTY

# INFORMATION TECHNOLOGY MASTER PLANNING

NOVEMBER 2017

Presented by

Tom Jakobsen
and
Steve Robichaud

CLIENTFIRST
TECHNOLOGY CONSULTING

# Tom Jakobsen, Senior Partner

## IT Support and Infrastructure Practice Leader

Mr. Jakobsen has over 30 years of IT Management and Infrastructure Consulting experience in the information technology arena. He also serves dual roles as IT Director and Consultant for multiple agencies.

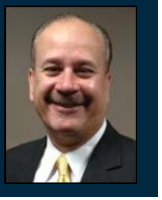
### Similar Clients/Projects

### Specialties include:

- IT Operations Management
- Contract and Interim CIO/IT Management
- Network Design, Procurement, Implementation, and Oversight
- IT Security
- Disaster Recovery
- Project Management
- Assessments, Strategy, and Planning

# Steve Robichaud, Partner

## Applications and Process Consulting Practice Leader



Mr. Robichaud has over 25 years of Software Applications and Business Process Improvement experience, with additional experience as President and General Manager of a national justice software company.

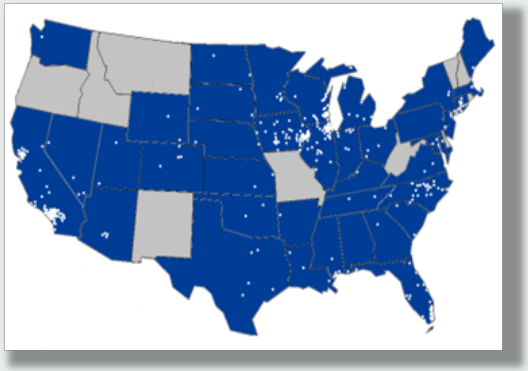
### Similar Clients/Projects

### Specialties Include:

- Executive Management Technology Advisement
- Information Technology Master Planning
- Business Process Review & Improvement
- Existing System Needs Analysis & Improvement
- Application Requirements Definition
- Software System Selection Assistance
- Project Management & Oversight
- Conversion Assistance & Planning
- Contract Reviews and Negotiations
- Disaster Recovery Planning

# LOCAL GOVERNMENT FOCUS

- National in Scope – With Local Presence
  - We are local government-focused with clients throughout the United States and in California
    - Counties
    - Municipalities
    - Special Districts
    - School Districts
    - Utilities



**Corona, CA**

Minneapolis, MN

Schaumburg, IL

Charlotte, NC

# CALIFORNIA CLIENTS

# WHY CHOOSE *CLIENTFIRST*?

***"IT Strategic Master Planning is the process of strategizing and architecting enterprise initiatives to support the needs of the organization"***

- Our IT Master Planning provides greater value
  - More than strategic analysis
  - Tactical (actionable)
  - Blended technical and business perspective
  - Collaborative and more comprehensive
    - Educational and Prioritization Workshops
  - Practical and sustainable
    - Implementation and budget realities
  - Use of Best Practices
    - PMI, ITIL, COBIT

**IMPORTANT**

# PROJECT TEAM

## Key Personnel

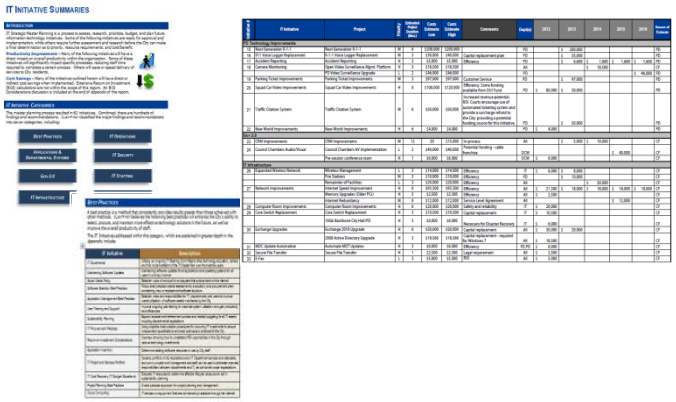
| | | |
|---|---|---|
| Project Role:<br>ClientFirst Title: | Project Director<br>Managing Partner, Management Consulting Practice Leader | David Krout |
| Project Role:<br>ClientFirst Title: | Project Manager<br>Senior Partner, IT Infrastructure and Support Practice Leader | Tom Jakobsen |
| Project Role:<br>ClientFirst Title: | Senior Consultant<br>Partner, Applications Consulting Practice Leader | Steve Robichaud |
| Project Role:<br>ClientFirst Title: | Senior Consultant<br>Network Engineer | Craig Williams |
| Project Role:<br>ClientFirst Title: | Senior Consultant<br>Management Consultant | Alexis Mercado |
| Project Role:<br>ClientFirst Title: | Senior Consultant<br>Practice Leader, Enterprise Communications Consulting | Tom Weiman |
| Project Role:<br>ClientFirst Title: | Network Engineer<br>Network Engineer | Adam Korman |

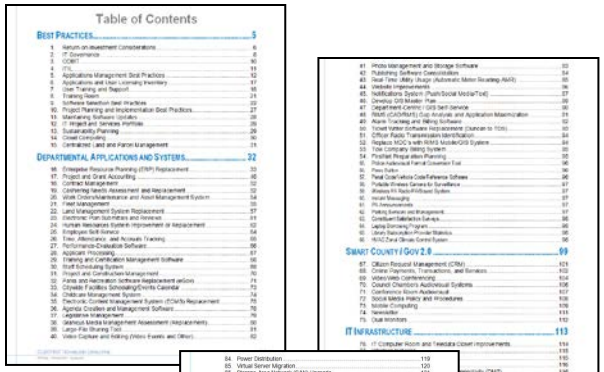
## MORE

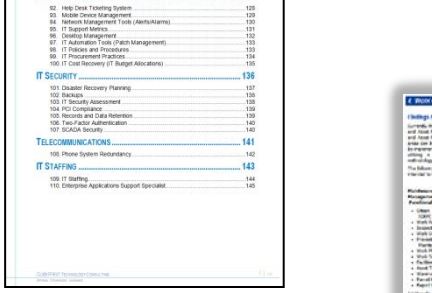
- IT Plans
- Experience and Expertise
- Diversified Subject-Matter Experts

# MORE

- Detail
- Best Practices
- Initiatives/Projects
- User feedback of tangible issues
- Education and Knowledge Transfer
- Actionable



## PROCESS AND DELIVERABLES

# PHASED APPROACH

**Issues and needs determined first…with strategies and goals to get there…culminating in tactical/actionable initiatives…working with the Task Force throughout**

# KEY FOCUS AREAS

- Departmental Business Operations/Needs
  - Departmental Questionnaires
  - Follow-Up Needs Assessment Workshop/Interviews
    - Complete Application Assessment
- IT Infrastructure & Operations/Needs
  - Interviews – Leadership to Help Desk
  - Review/Assessment of IT Staff and Resource Requirements
  - And much more…

**Two Focus Areas**

# PLAN COMPONENTS

- Needs Assessment
  - Identifies current-state strengths and weaknesses
  - Outlines gaps in best practices, application systems, security, infrastructure, organizational structure, and skill sets
  - Provides an initial snapshot of initiatives to be included in the plan, including:
    - Best Practices
    - Applications and Departmental Systems
    - Information Technology – Infrastructure, Communications, Operations, IT Staffing, and Security
    - Emerging Technology, Smart County, Gov 2.0 and online services

# PLAN COMPONENTS

- Summary Report
  - Project Objective, with Methodology and Approach
  - Goals and Strategies
  - Statistics, Metrics, and Benchmarks, versus similar organizations
  - Key Issues, Initiatives, and Next Steps
- Resource Requirements Analysis
  - Identifies departmental, IT, and third-party resource requirements for ***successful*** implementation of the plan
  - Recommended organizational structure and governance model
- Budgets and Timelines
  - Budget for each initiative on five-year timeline with priorities
  - Timelines for major initiatives within the Plan

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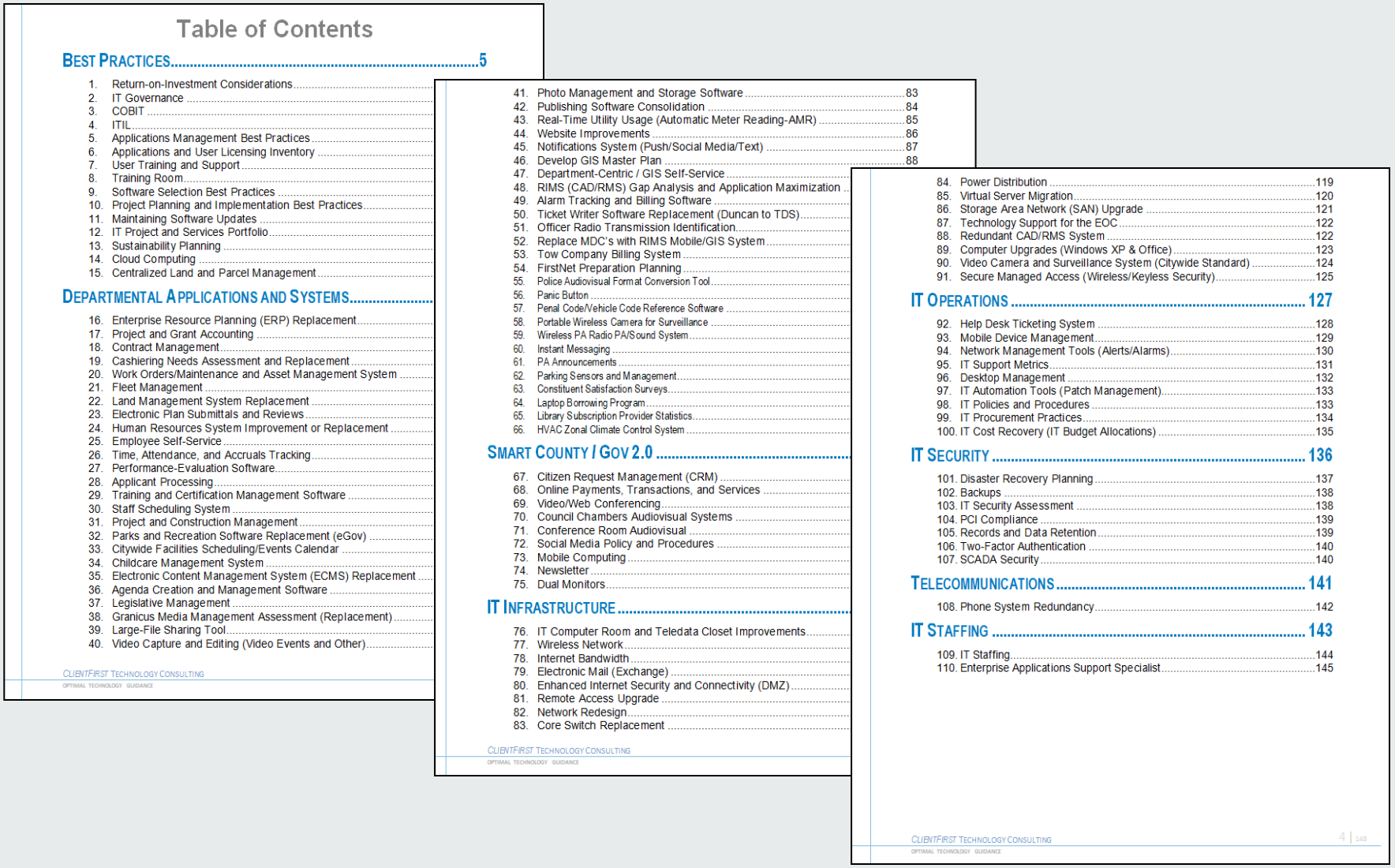

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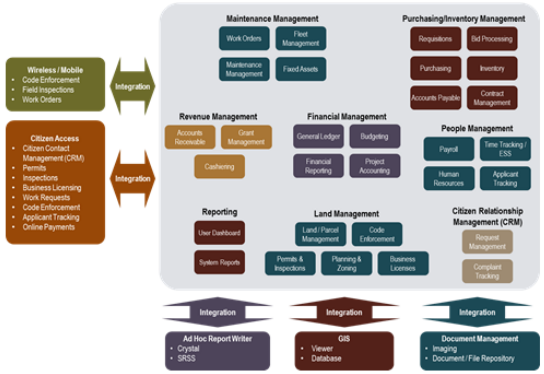
# *DEPARTMENTAL* INITIATIVE - SAMPLE

## 17. Enterprise Resource Planning (ERP) Replacement

Enterprise Resource Planning (ERP) is an organization-wide software solution that allows integration among various departments and their respective functions. The result is a centralized system of communication, data storage, and operations management. Replacement or improvements to ERP solutions bring about processes from which multiple departments can benefit. Common municipal-related ERP applications modules include accounting, financial reporting, payroll, human resources, planning and permitting, and work orders. The following graphic shows a typical municipal ERP environment.

**Example Enterprise Applications Overview**




***Note:*** *The Land Management function represented in the above diagram (excluding Business Licenses) is included in a separate initiative due to the City's existing TRAKiT implementation.*

### Findings and Observations

Currently, the City primarily utilizes the Superion Pentamation system for its ERP needs with the exception of TRAKiT for Land Management, HTE for Business Licensing, and iWorQs for Work Orders. Pentamation is built on technology that was used several generations back in the system development timeline. It is therefore outdated and lacking in adequate integration, reasonable reporting capabilities, and commonly utilized functionality found in other municipal based ERP systems. The Pentamation system requires excessive manual workarounds and reconciliations. Pentamation is also not meeting the City's expectations and carries significant annual costs for the resulting return realized by the City. Nearly, all departments noted

The City is missing opportunities for labor savings (thousands of labor hours per year), improved customer service due to lack of integrated solutions with sufficient training, and functionality to meet internal operational and citizen/public needs.

All departments expressed a strong interest in newly available features and enhancements that a more modern ERP solution can provide. Departments described unmet reporting needs, feature/functional requirement deficiencies, and an overall desire for the system to be replaced. Gaining greater utilization in enterprise applications software modules through installation of a new ERP system is key to significant increases in citywide productivity and efficiencies.

The following is a table that shows the City's major suites that are usually included in an ERP system. The table also depicts what prominent municipal ERP systems typically offer.

| Industry-Typical Enterprise Module Name | Current Available Vendor Equivalent Module | Licensed | Implemented | Potential Process Improvements |
|---|---|---|---|---|
| **Financial Management** | | | | |
| **Superion Pentamation** | | | | |
| General Ledger | Fund Accounting | Y | Y | Y |
| Accounts Payable | Fund Accounting | Y | Y | Y |
| Requisitions | Fund Accounting | Y | Y | Y |
| Purchase Orders | Fund Accounting | Y | Y | Y |
| Budgeting | Fund Accounting | Y | Y | Y |

### Recommendations

- Replacing the current outdated, Pentamation, iWorQ, and Verizon Fleet applications environment with a modern, fully integrated ERP solution.
- Ensure that the City has identified all its applications needs, and that appropriate funding has been budgeted for a replacement ERP by conducting a comprehensive needs assessment and developing a Request for Proposal (RFP).
- The needs assessment process should provide an inventory of current and future functionality requirements by application and department. The process can also be used to inventory all reporting requirements, as well as integration/interface requirements between other applications, such as CRM, ECMS, website, GIS, etc.
- The needs assessment should also include a business process review for each module, including reviewing manual processes and shadow systems, such as spreadsheets, to determine automation improvements that will result in labor efficiencies.
- Through the RFP process, potential ERP software vendors will be asked to respond with their capabilities and compliance with City-specific requirements.
- Select new ERP software vendor according to the *Software Selection Best Practices* initiative.
- Follow implementation project management best practices according to the *Project Planning and Implementation Best Practices* initiative.

***Note:*** *City IT staff members have not conducted this type of project with these specific business process analysis, documentation, and negotiation requirements. It is highly recommended that the City consider obtaining consulting services from a municipal ERP Applications subject-matter expert to perform the business process reviews, needs assessment, RFP development process, and contract negotiations process.*

### ERP Background and Supplemental Information

This supplemental background section includes findings and observations for the following:

- CIS Utility Billing (replacement of Pentamation)
- Contract Management (new)
- Bid and Proposal Tracking System (new)

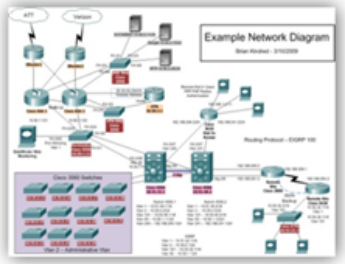
- Initiatives described in business terms.
- Findings and observations from an objective perspective.

# *IT* INITIATIVE - SAMPLE

## 82. Network Redesign

### Findings and Observations

- Current network topology contains single points of failure for core connectivity.
- Bottlenecks exist in the network, resulting in poor performance and reliability.
- Not all devices within the core network were designed with core network functionality in mind.
- Network was not built with future growth in mind, and is limited.
- Network IP addressing and segmentation improvements could further increase security and performance.
- The Police Department is segmented from the City administrative network.
- The SCADA network is segmented from the City administrative network.




### Recommendations

- Redesign the core network to increase speeds a minimum of ten times.
  - Create a resilient core network that eliminates single points of failure.
- Review Virtual LAN (VLAN) network segmentation and revise per current best practices.
- Monitor and collect performance metrics on network availability and viability.
- Consider implementing firewalls between the City administrative network, and the Police and SCADA networks.

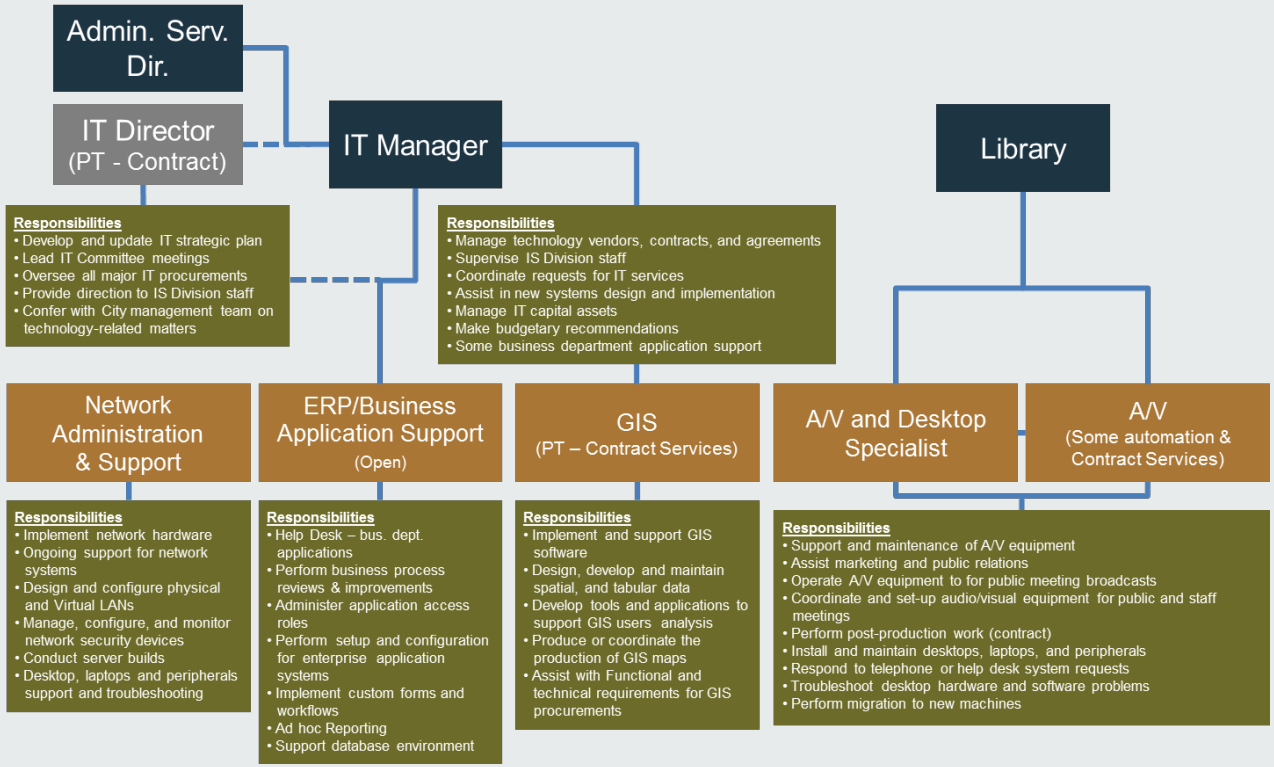
### Benefits

- Improved network performance speed and reliability
- Reduced support costs
- dundancy a sites

- Initiative Descriptions
- Findings and Observations
- Staff Feedback
- ROI Considerations
- Recommendations
- Benefits

# IT STAFFING ANALYSIS

- Sample IT Staffing Org Structure

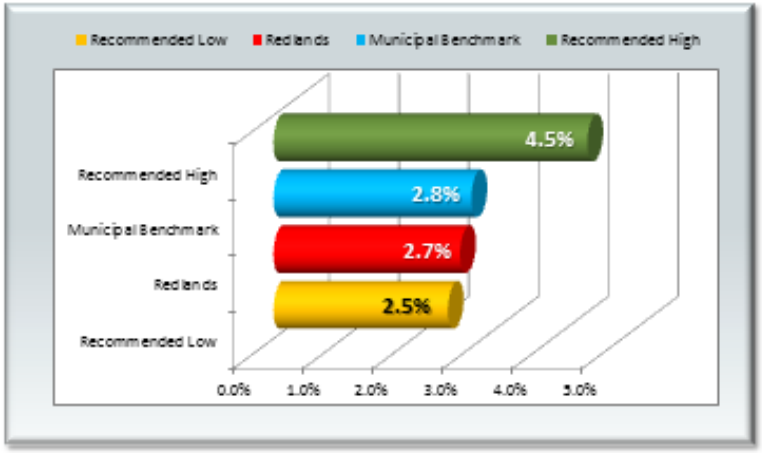


# METRICS AND BENCHMARKING

## IT Spending versus Revenue Fund Budgets

The following table depicts Redlands's IT Spending versus Recommended Best Practices and a Municipal benchmark of 29 agencies. These agencies responded to a survey and are from Illinois, California, and Wisconsin.

| Redlands | Recommended Low | Municipal Benchmark | Recommended High |
|---|---|---|---|
| 2.7% | 2.5% | 2.8% | 4.5% |



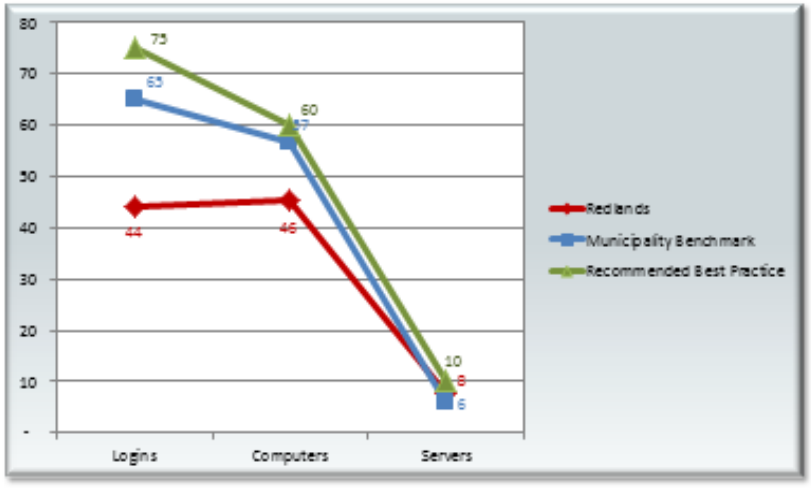

The 2012/2013 adopted budget, general and enterprise revenue funds were $99,429,217 and the IT expenditure budgets total of $2,666,462. The municipal spending benchmark range was between 1% and 8%. The percentage of IT expenditures versus revenue fund budgets at Redlands is near the recommended low. We understand that additional funding may not be forthcoming; therefore, it will be imperative to develop a sustainability plan that provides realistic resource allocation. Greater funding should result in increased productivity at the department level.

## IT Staffing Ratios

The following table depicts Redlands's IT Staffing Ratios versus a Municipality Benchmark of 37 similar agencies. These agencies responded to a survey.

| | Redlands | Municipality Benchmark | Recommended Best Practice |
|---|---|---|---|
| Logins | 44 | 68 | 75 |
| Computers | 46 | 58 | 60 |
| Servers | 8 | 6 | 10 |

In this comparison, the City's staffing ratios for users, computers and servers are less efficient than their peers (i.e., supporting less users and devices per IT staff) and recommended best practices. As a part of our review, we did uncover many areas in which the City could expect to have significant productivity improvements for these benchmarks.



# STRATEGIES, GOALS & OBJECTIVES

## IT STRATEGIES, GOALS & OBJECTIVES

The strategies for leveraging information systems to deliver City services are listed below. Within each strategy, we have listed initial goals and objectives for the City. We have translated those goals and objectives into specific initiatives in the *Appendix* of the report. Additionally outlined later in the report, are the budgetary costs for each initiative, resource requirements, implementation timeframe, and, if appropriate, the next steps toward implementation.

### MODERNIZE IT INFRASTRUCTURE

**Goals and Objectives**

- Create a City-wide computer room
- Move from obsolete hardware and software to current generation infrastructure
  - Eliminate productivity wasters including incompatible software and disk space limits
- Improve resiliency and uptime of infrastructure
  - Create and track uptime metrics

### DEVELOP SUSTAINABILITY PLAN

**Goals and Objectives**

- Develop an application portfolio and understand the life cycle cost of each application
- Plan for the sustainability of applications in addition to existing hardware capital replacement funding
- Create a IT Capital Replacement Plan to forecast and fund hardware and software replacement costs

### IMPROVE IT CUSTOMER SERVICE

**Goals and Objectives**

- Foster a customer service attitude for all aspects of IT service delivery
- Create an IT Help Desk
- Document service levels for incident response and enhancements
- Develop customer service performance metrics and exceed those expectations
- Develop Mobile Device Management capabilities
- Consider "Bring Your Own Device" and "Network Access Control" for some users

### IMPROVE STAFF PRODUCTIVITY

**Goals and Objectives**

- Increase utilization of software application features
  - Increase user application training
- Introduce application management best practices
  - Improve departmental ownership of applications
  - Identify key roles and responsibilities for core business applications
- Conduct process reviews and document application feature/function requirements to identify automation and opportunities to streamline processes
- Utilizing Return on Investment (ROI) principals, justify additional applications to improve productivity and service
- When justified, move to second generation mobile computing (tablets vs. laptops)

### ENABLE CITY WIDE APPLICATION USAGE

**Goals and Objectives**

- Connect all City facilities through a wide area network
- Expand remote access to improve staff productivity
- Improve reliability of access, reduce downtime

### ADOPT INFORMATION TECHNOLOGY BEST PRACTICES

**Goals and Objectives**

- Develop an IT Steering Committee and Governance mechanism
- Adopt a Best Practices approach to software selection and management
- Create and maintain project inventory
- Utilize project management principles for larger projects
  - Become date- and project schedule-driven
- Finalize documentation
  - Create standard operating procedures
- Implement technology productivity tools, automate:
  - Security patch management
  - Desktop configuration and maintenance
  - Network management
  - Alert and alarm threshold management

### IMPLEMENT DISASTER RECOVERY CAPABILITIES

**Goals and Objectives**

- Develop a plan to implement disaster recovery capabilities
  - Over several years, develop the capability to recover IT applications in the event of a major incident in the San Bernardino Valley
- Consider implementation of redundant Internet connections with automatic failover

# CIP / BUDGET

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## IT Master Plan Report

Project / Initiative Budget Estimates

| Initiative # | IT Initiative | Comments | Priority | Budget Range Low | Budget Range High | Dept(s) | Funding Source(s) | Current 2016 Fiscal Year | FYE 2017 | FYE 2018 | FYE 2019 | FYE 2020 | FYE 2021 | Outlying Yrs (Capital Expend) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Best Practices** | | | | | | | | | | | | | | |
| 5 | Applications Management Best Practices | Providing tools and staff training. Establishing roles and responsibilities for enterprise applications. | TP | $ 7,500 | $ 15,000 | All Departments | | | $ 10,000 | | | | | |
| 6 | Applications and User Licensing Inventory | Providing tools and staff training | H | $ 1,000 | $ 5,000 | All Departments | | | $ 5,000 | | | | | |
| 7 | User Training and Support | Annual Recurring | H | $ 25,000 | $ 75,000 | All Departments | | | $ 25,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | |
| 8 | Training Room | Computers and equipment | M | $ 10,000 | $ 15,000 | All Departments | | | $ 12,000 | | | | | |
| 9 | Software Selection Best Practices | Standard methodology and practices | H | n/a | n/a | All Departments | | | n/a | n/a | n/a | n/a | n/a | |
| 10 | Project Planning and Implementation Best Practices | Providing tools and staff training | H | $ 1,000 | $ 5,000 | All Departments | | | $ 5,000 | | | | | |
| 11 | Maintaining Software Updates | Standards | H | n/a | n/a | All Departments | | | n/a | n/a | n/a | n/a | n/a | |
| 12 | IT Project and Services Portfolio | Documenting IT Department roles and responsibilities for all services including SLA for business application support | H | $ 1,000 | $ 25,000 | IT & Finance | | | $ 15,000 | | | | | |
| 13 | Sustainability Planning | Providing tools and staff training | H | $ 5,000 | $ 15,000 | All Departments | | | | $ 10,000 | | | | |
| 14 | Cloud Computing | Standards | H | n/a | n/a | IT & All Departments | | | n/a | n/a | n/a | n/a | n/a | |
| 15 | Centralized Land and Parcel Management | Included in developing GIS Master Plan Initiative | TP | See below | See below | All Departments | | | see below | see below | see below | see below | see below | |
| **Applications and Departmental Systems** | | | | | | | | | | | | | | |
| 16 | Enterprise Resource Planning (ERP) Replacement | Includes the indented initiatives below: | TP | $1,000,000 | $2,000,000 | All Departments | | | $ 85,000 | $ 1,000,000 | $ 500,000 | $ 250,000 | | |
| 17 | Project and Grant Accounting | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 18 | Contract Management | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 19 | Cashiering Needs Assessment and Replacement | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 20 | Work Orders/Maintenance and Asset Management System | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 21 | Fleet Management | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 22 | Land Management System Replacement | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 23 | Electronic Plan Submittals and Reviews | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |
| 24 | Human Resources System Improvement or | Included in ERP initiative | TP | Included with ERP | | All Departments | | | | | | | | |

- Using a budget *range* is wise
- Include other information
  - Priority
  - Departments Affected
  - Dependencies
  - Comments

# THE RESULT

## How will this leave the County better off?

- Assessment of Existing IT Environment (a Baseline)
- Identification of Strengths and Weaknesses
- Identification of IT Needs (Countywide)
- Expression of IT Needs as Projects/Initiatives
- Prioritization of All IT Projects/Initiatives
- Improved Security
- Increased Efficiency
- Consensus on IT Spending and Investment
- Improved Governance of IT Resources and IT Decision Making
- Alignment of IT Strategies with Countywide Strategies

It’s an IT Roadmap for the County to Follow

# Questions?

THANK YOU!